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AND
COUNTRY GENTLEMAN.

A CHRONICLE OF THE HOMESTEAD, POULTRY-YARD, APIARY, & DOVECOTE.

CONDUCTED BY

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TO OUR READERS.

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We publish the following without either comment or correction:—

“MR. EDITORS,—

“I’ve long wanted to tell a bit of my mind, but days was so short and candles doesn’t give the light they used to; but now’s different, and I sits down to say how things is changed. Even gardeners is. They used, when Ben was a-courting me, to be loving chaps—quite friendly-like; but now even their big club at Kensington is all tumbling apieces—and why? I’ll just tell ‘e, and do you tell ‘em—it’s cause they doesn’t mind your motto, ‘For Gardening and Gardeners.’ Why, the club was made for them only. But now one of the big-club men says, ‘I’m for Cole;’ and another says, ‘I’m for Kensintun, my girls croquet there;’ but no one says nothing for old Chiswick, the club’s old best home. Bah! Them lords and them as has nusmaids at Kensington do as good as blue-aprons to pay club-money, but blue-aprons should have the management more. You told us all as was said when they was a-quarrelling—and how they did talk, surely!—but they was talkers and not doers. Jist as my Ben used to say when he was alive—

“ ‘Men of words and not of deeds
Is like gardens full of weeds.’

And weeds we all knows smothers the crops. Jist do you and a good blue-apron or two put your hoes among ‘em. Blue-aprons can do without them big-club men, but the big-club men can’t do without the blue-aprons.

“And you your own born selves, Mr. Editors, you doesn’t behave as when my Ben wasn’t dead. Cottage Gardeners you was then, and he showed you how to grow big Cabbages; but now you’ve a finer name, and put in a precious lot of what we doesn’t want. I could cop the thing into the fire sometimes, I’s so riled, specially that about cooking Ginny pigs. Then what’s become of ‘old Bob,’ as you called him? but I know who you ment, and my Ben said he was ‘the best of Fish.’ It wo’n’t do for you Editors to show the cold shoulder to old friends. Why, fashions changés in gardens as they does in bonnets; and if you hasn’t an old gardner to ask to help ye, how will the old flowers fare as is a-coming up agen? Why, one of them chaps as wins prizes witli crackjaw-named plants didn’t know t’other day a Turkey Nunculus that’s in my garden. He com’d a-courting to my Mary Anne, and she has on Sundays what she calls a Dolly Varden hat—why, it’s the old gipsy hat of my courting days! And that minds me that he what wrote about that Dolly Varden spluttered as if there was no one of my name living, and Ben was very riled about it; but I said he’s only one of them writing chaps as lives by telling lies. If you, Mr. Editors, will come to Tiptree on our race-day—the very next 25th of July as is—I’ll show you gentlemen that there is

“BETSY HARRIS.”

[We have no need to accept the invitation, and have told our friendly plain-spoken correspondent that we agree with her in most that she has written—have assured her that we do not cast off our old friends—that Mr. Fish is unwell, but is still one of our helpmates—that we tell all that is new about Cabbages as well as about Orchids and other things of the homestead; and we will add for the information of our readers, that “cop” in Essex is synonymous with throw, and that there “riled” means angry.]

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WEEKLY CALENDAR.

Day of Month	Day of Week	FEBRUARY 5—12, 1873.	Average Tempera- ture near London.			Rain in 43 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.		Days.	m.	h.	m.	h.	m.	h.	m.				h.
6	TH	Dr. Priestley died, 1804.	46.5	32.5	39.5	21	32	af 7	57	af 4	27	11	18	3	9	14	22	37
7	F	Twilight ends 6.11 P.M.	46.9	33.0	39.9	24	31	7	58	4	after.	28	4	10	14	25	38	
8	S	Half Quarter day.	45.6	32.0	38.8	22	29	7	0	5	46	0	30	5	11	14	28	39
9	SUN	SEPTUAGESIMA.	45.3	31.6	38.4	17	27	7	2	5	41	1	21	6	12	14	29	40
10	M	[Meeting, 3 P.M.]	44.9	30.1	37.5	16	25	7	4	5	44	2	0	7	13	14	30	41
11	TU	Royal Horticultural Society, Annual General	44.5	29.8	37.2	19	23	7	6	5	52	3	31	7	14	14	30	42
12	W	Royal Horticultural Society, Fruit, Floral, and [General Meeting.]	44.9	29.5	37.2	16	21	7	8	5	2	5	53	7	0	14	29	43

From observations taken near London during forty-three years, the average day temperature of the week is 45.2°; and its night temperature 31.2°. The greatest heat was 55°, on the 10th, 1831; and the lowest cold 3° below zero, on the 11th, 1845. The greatest fall of rain was 0.52 inch.

GERANIUMS FOR BEDDING-OUT.—No. 1.



MUST apologise for having been so long in sending you notes on bedding Geraniums, which I promised some time ago, but I have been very much occupied, and last season was so unfavourable for the trial of Geraniums that I have not much that is new to add.

I will begin my remarks with the darker kinds of crimson.

The best of the old kinds with me were again Waltham Seedling and Bayard, both of which will be so well known now as to need no description. Waltham Seedling has now stood the test of a great many seasons, and though the truss is not so large, nor the head so bright as in Bayard, yet the stiffness of its flower-stalk and its dwarf even growth will always insure it a place in all gardens. Bayard has a finer truss, but it is apt to straggle, and in a wet season the heavy heads of flower are often beaten down. Douglas Pearson, another of the same strain, proved better able to withstand the weather than Bayard; it has a fine truss, dwarf and compact growth, and short flower-stalk. Duke of Devonshire (Pearson), which in 1871 made one of the finest beds I ever saw, was not so successful this year, owing to the wet; it has, however, one of the finest trusses imaginable. Moor of Venice (Downie, Laird, & Laing), is much of the same type of colour as the last—deep crimson; it has a very fine truss, but did not bloom very freely.

Bonfire (W. Paul) and Vesta (W. Paul), bright scarlet crimson, I class together as being very nearly equal in point of merit. Vesta I believe to be a seedling from Waltham Seedling, but a brighter colour, and rather larger truss. Bonfire has a smaller truss, but a larger flower. Both are exceedingly good, and Bonfire seems to stand wet weather better than most Geraniums. The next one I name, Star of Fire (Downie, Laird, & Laing), is one of Mr. Laing's most promising seedlings, brighter in colour than either of the last, one of the brightest and most telling colours yet introduced into the garden—a bright scarlet without any shade of yellow, and therefore, perhaps, more properly classed among the crimson scarlets. Its only fault is that the flower-stalk is too long. It is a good grower, though not coarse, and is admirable for fair-sized beds or for middle rows in a ribbon border. It flowered freely with me last year (1872), in spite of the season.

This includes all the good crimsons and crimson scarlets that I bedded-out; those of which I had only a few for trial I will mention later on.

Of crimsons, I have discarded Crimmon King, which, though of remarkably fine colour, grows too coarse in leaf, and will not flower sufficiently with me; and Glory of Waltham, which I have seen very good elsewhere, but which has not fine-enough trusses here.

I next come to the section of scarlets, which includes those that have a tendency to yellow in the scarlet, like the type of the old Tom Thumb, Little David, &c. With

me the best is Sobieski. What its parentage is I do not know; I obtained it from Mr. Pearson, who had it sent to him from a friend as a match for Bayard in another colour. I fancy it is a seedling from Sutton's Perfection, which was itself an improved type of Tom Thumb, but it is far superior to the old Tom Thumb—a good truss, pure colour, and free bloomer. After giving Vesuvius another trial, I have finally determined to discard it. I am aware I seem to be in a minority about it, as everyone is inclined to praise it. It is, no doubt, a free bloomer, of strong hardy constitution, and is good for those who pay no attention to their Geraniums during the winter months; but the trusses are poor, always small, with very few flowers out at a time, and it has a common look about. I am obliged to own I have seen it at times looking very well, but it has never pleased me for long together, and no one who has been round my garden these last two years ever asked me for cuttings from it, and this is rather a crucial test. Glow is another one which I do not intend to grow again, though I consider it superior to the latter, and a very good pot plant. The leaf, however, is coarse, and unless the season is very favourable it is hardly worth growing. Lady C. Grosvenor is still a favourite with me; though the flower-stalk is rather too long and weak, still the colour is undeniably bright and good, and the truss fine, and there is hardly any bed so good when at its best. Cybister I have discarded as being nearly alike in point of colour to the last, and not so good a habit. The next I shall name is Charley Casbon, which quite realised last year all I expected from it. It is a very dwarf grower and free-flowerer, and must be planted rather nearer than most Geraniums. It is a good match for Violet Hill in point of habit of growth, though the flower-stalk, if anything, is rather too short, but this is a fault on the right side. I am much mistaken, however, if this do not become a great favourite with those who like a dwarf compact bed. The next two I name are Godfrey and Grand Duke, which are more light red, perhaps, than scarlet; they are much the same in point of colour. Godfrey has too long a footstalk, though a good bloomer. Grand Duke is one of the best Nosegays, very fine truss, with large individual flowers, after the style of Le Grand and Eclat, but a better bedder.

The next section will be the cerise with a violet tinge, as Violet Hill, Amy Hogg, Dr. Hogg, Arthur Pearson, and Lady Kirkland. I still adhere to my old friend Violet Hill, and I have not found it suffer from weather as some have done; it requires, however, good treatment, and will not stand rough usage. No bed flowered so continuously or so freely again with me last year, though some of the plants had been grown in a stove in the spring to increase my stock and to get some young plants (spring-struck) for edging a border. The next best to Violet Hill, though of much stronger growth, is Arthur Pearson, an improvement on Amy Hogg, with a larger truss and firmer footstalk. Dr. Hogg and Darius (W. Paul), I class together; both are beautiful in point of tint, especially in autumn. Dr. Hogg is apt to drop its petals too much in

hot sunny weather. Both are free-bloomers. Dr. Hogg has rather more of a violet tinge, and Darius has, perhaps, the larger truss with the better footstalk. Lady Kirkland is also a fine-blooming variety, with a large truss; the footstalk, however, is too weak for wet weather. It has, however, the desideratum of not seeding so freely as many of this colour do.

I will next take the pinks, of which there are many shades of colour from deep pink to light rose. The best and brightest pink was Pink Queen (Downie, Laird, & Laing), another very promising seedling of Mr. Laing's, free-blooming in spite of the weather, with a very fine truss on a stiff though rather too long a stalk. It is of very healthy growth, and robust without being coarse; it is fine for large beds, and may be made suitable for small beds with proper care. Though a seedling of Mr. Pearson's, Miss Rose Peach, which I shall refer to when I come to Mr. Pearson's seedlings, will take its place for small beds. Maid of Kent has again merited the encomiums Mr. Luckhurst passed upon it; a bright pink, not so deep a colour as the last, not so large a head, but more compact, and a free bloomer, which stands the weather well. The third I select—Rose Rendatler, a light rose pink, large truss, stiff habit, with freedom of blooming, is known to all; it is best from old cut-back plants. Countess of Rosslyn has done well with me, but will be rather too delicate a habit for many. It is light rose, somewhat similar in colour to Rose Rendatler, but more dwarf in habit.

I discard the following:—Blue Bell, Dante, Pink Perfection, and Ne Plus Ultra. Blue Bell is a very poor colour for distant effect, and does not bloom freely enough with me.

There are one or two other old favourites I have not named, as Indian Yellow and Rebecca, which are difficult to classify in point of colour, but which are always useful for variety's sake in a garden.

Whites are still a desideratum; all equally turn pink, and nearly all are so much the same as Madame Vaucher that there is hardly any practical difference between them, though The Bride, if it flowered more freely, seems less inclined to change colour in the sun. I care, however, less about whites, as the colour is supplied in the white-leaved section.

Amongst others that I have not named is one—Charles Dickens—which I had great hopes of the year before last, which has grievously disappointed me last season, and from what I have seen of it both in pots and beds I am afraid it will never bloom freely on young growth. Avocat Gambetta, a French seedling, a red crimson, did very well, and I advise those who have it to give it an extended trial. Phœbus and Sunlight (Laing), did not stand the wet, no more did the Rev. J. Wolley (Pearson); these seem to require a dry, warm season.

I will defer my notes on trial sorts to a second communication.—C. P. PEACH.

STORING STRAWBERRY PLANTS FOR FORCING.

As Mr. Record invites discussion on this subject, I will describe the system of culture adopted here, and add a few remarks on what I have seen at other places. In the first place, we are all agreed on one point—namely, that everybody's great aim is success, and gardeners, like doctors, differ; one believes in this system, and another adheres as closely to that. Still, is it not wonderful that two men directly opposed in opinion produce equally good results?

I will now state the way in which I prepared nearly two thousand plants for forcing during the past autumn. I will not occupy space with any lengthened details as to soil, potting, &c. The young runners were layered in the usual way early in June, and as soon as they were sufficiently rooted they were at once transferred into 6-inch pots, Black Prince into 5-inch pots. I do not believe in large pots for early forcing. When the plants had become established after their shift, they were placed on a south border on a good hard bottom of coal ashes; they were liberally supplied with water when required, but owing to the almost incessant rains of the autumn I had artificial staging erected in cool Peach houses, and thither they were taken to finish the ripening process, in batches as room could be afforded; and lastly, they were taken to shallow earth pits, to be protected from frost and rain for the winter, their roots neither wet nor dry. With us it is considered an error to allow the roots to become paralysed through excessive dryness; and the opposite extreme, with roots confined in a small pot and at rest, must be equally injurious. I agree with Mr. Record in almost all he says, but

would strongly recommend protection by glass in an autumn like the past, either taking the plants to the glass or the glass to the plants. Climate is worthy of study in Strawberry-forcing, as in all other things, and what we want to imitate is a fine autumn for ripening wood. During the past autumn we did not enjoy this advantage, and we must endeavour to imitate Nature in her more favourable days. May we not learn a lesson about storing from the plantations outside? The plants rest on a cool moist bottom, with a little protection to the crowns; but I think that in the climate of this place it would be a great error to expose Strawberry plants in pots to the rainfall of the past autumn or the present winter. The plants are here kept as cool as possible, only protected against frost and rain.

I am much interested in Strawberry-forcing, and would like to see the subject handled in all its details by Mr. Record or other equally eminent gardeners. I believe that there are more failures in forcing the Strawberry than in that of any other fruit; but at the same time I can state on undoubted authority that excellent crops of forced Strawberries have been produced from the gardens whence I write when the plants were prepared on the old system of drying-off and winter-stacking. I have seen six hundred Strawberries forced at one place, and not a single dish of fruit as a return for all the trouble; it was early, and the season anything but favourable. I can well remember when, after three months' hunger and thirst, they were once more brought to the light; after a good soaking or two of water they were placed in a low damp pit previously prepared for their reception, and a rather high temperature was maintained. When the plants were in flower they were never once exposed to the sun, and my own conviction is that the cause of failure was a too moist atmosphere. Had a little air been judiciously given, and the fingers run along the flowers to disseminate the pollen, a fair crop might have been the result. The pit being low and shaded, and little or no air given, the flowers when expanded must have been continually drizzled with condensed moisture: hence the failure in setting. Another cause of failure may be very fairly attributed to the sudden change from obscure imprisonment, cold, and darkness, to the East Indian climate of an early vinery without any previous preparation. My own plan is to start as many plants as possible in the early Peach house, where very little fire heat is used; every blink of sun is taken advantage of. In the absence of a proper Strawberry house great caution should be used in forcing the Strawberry until the fruit is set. When all danger is past, of course thinning the fruit, attention in watering, and a rather cool dry atmosphere to finish ripening, are essential points. But where large quantities are to be forced, I hope to see the day when employers will perceive that it is to their own advantage to erect proper houses for the early culture of so favourite a fruit.—THE GARDENER, *Roby Hall, Liverpool.*

SELECTION OF ROSES.

My opinion of Gloire de Dijon and La France is exactly the same as Mr. Cant's, published in this Journal (page 73). La France is a capital grower, very hardy, and with fine foliage; but here (Dorset) it does not bloom freely. It presents a slovenly appearance, and is a bad foul-weather Rose. I have had for four years a capital plant of it, but not more than one bloom per annum has been good. It is probably too cold and bleak for it here.

As Mr. Eyre asks the opinion of growers with respect to the growth of Marie Baumann—a very beautiful Rose—I give my experience of it. It is neither "vigorous" nor "robust." It is a very bad grower. I had twenty-one plants several years ago, not one of the plants has grown well. I threw away seven of them last autumn, and put two plants in a pot in my vinery, in hopes of striking it on its own roots. The others are bad plants. By the side of them Gloire de Dijon, Charles Lefebvre, and Duc de Cazes throw shoots from 4 to 6 feet in length. I saw a whole line of this Rose at the Dorset nurseries two years ago; the growth of the whole line was wretched.

The lists of the "electors" do them credit. Instead of Marie Baumann I recommend Marie Rady, a good grower, of erect habit, and first-rate. Instead of Madame Angusta Verdier read Madame Eugénie Verdier, fresh rose colour or rosy carmine. I had it at Rushton some years ago.

There are six Roses that might be selected as the best for all purposes: Charles Lefebvre, Gloire de Dijon, Céline Forestier, Triomphe de Rennes, Souvenir de la Malmaison, and

Sombrenil. I had fifty full-sized blooms of "old snob" ont on one tree early in the spring, thirty of the blooms looked as if the edges of the petals had been dipped in blood. It was really a fine sight. The best bloom in the year of the International Exhibition at Kensington (1866) was Mr. Moffatt's globular specimen of "old snob."—W. F. RADCLIFFE.

TABLE DECORATIONS.

I AM very glad "D., of Deal, has again taken up the endgels *versus* holes in tables for dinner decorations; and though I know he is quite able to hold his own, yet, perhaps, he will not mind my backing him up. The admirers of the system say that tablecloths can be ironed and folded so as not to show the joint. I confess I have never yet seen it so managed; and even at Birmingham, with the dim light of the gas, the folds in the tablecloths were most apparent.

The fault of most decorations, as a rule, is they are overdone with foliage, especially Ferns and Palms. Fronds of the Ferns are constantly merely laid on the table, or stuck into dishes or under plates, when an hour or so of the heat of gas or of the ordinary heat of the room in summer would wither them up. The art of table decoration seems to me—to make the most you can of a few flowers, to be careful about the harmony of colouring, to make each individual flower show its own beauty; I mean, not to let one flower crowd another, so as to injure its neighbour. I do not object myself to high-scented flowers so long as they are not too overpowering, as a *Lilium auratum* or some Hyacinths; for though with the present system of *diners à la Russe* we are not so much victims to the smell of highly-sauced dishes, still flowers help much to dissipate or overcome the smell of dinner. One canon of good taste ought never to be broken, and that is, that the floral decorations should not prevent the guests seeing each other, and the table should never look as if it were intended to carry the decorations, rather than the flowers being accessories to the fruit and dessert. Multitudes of Ferns and Palms will not make up for a paucity of fruit, and sometimes beautiful Orchids and choice stove flowers only help to point out the meagreness of the dessert.

Although I know some will still continue to advocate letting pots into the tables, and introducing miniature fountains and gold fish, and other incongruities, still I am pretty certain that the common sense of the British public will not take it up, and I have never heard of its being done yet, except at public dinners, where deal boards are not, perhaps, so much out of place, and at exhibitions for the sake of novelty. As a rule, plants in pots are only makeshifts, and to save the trouble of making-up suitable vases and glasses of cut flowers, which are, in point of fact, the only legitimate decorations in a floral point of view admissible on a dining-room table or on the drawing-room. An especially beautiful Orchid or well-trained and well-bloomed plant is, no doubt, a pleasing variety, but there is no artistic taste displayed in the arrangement; the merit is due to the grower, not to the arranger.—C. P. P.

ROYAL HORTICULTURAL SOCIETY'S COUNCIL.

I AM very glad to see that one who signs himself "A VERY OLD F.R.H.S.," has written a protest against the nominees of the Council to fill the places of the retiring members. No one can have the least doubt that Major Trevor Clarke is a most fit person to be on the Council, and, if the other names proposed had been as good, no one would have hesitated to have supported them. I do not wish to enter into the individual merits of the two noble Lords who are asked to lend their names to the Royal Horticultural Society; we are certainly indebted to Lord Londesborough, or to his gardener, Mr. Denning, for the beautiful Orchids which from time to time are sent to grace the exhibitions of the Society. But it is high time that something be done to have practical horticulture represented on the Board. At all the provincial meetings of the Society, all but a few members of the Council have been conspicuous by their absence. No care is taken to interest the working bees of the gardening world, and I have heard both just and deep complaints of the apparent indifference of the Society to the welfare of the gardening community. I hope, therefore, all who think with "A VERY OLD F.R.H.S.," that practical horticulture ought to be represented on the Board, will return their voting papers, erasing the names of Lord Londesborough and Lord A. Churchill, and putting into their places the names of the Rev. S. R. Hole and Mr. B. S. Williams,

who may very deservedly be selected to represent gardening interests. If no one else of higher standing in the horticultural world can be found to propose them, it is my intention to do so; and I hope all who have the interest of horticulture at heart will step forward to break down the present rule, by which the Council dictate to the rest of the Fellows who are to be appointed to sit at the same board with them to represent the whole Society. I need not enter upon any account of the merits of the candidates to be proposed. The Rev. S. R. Hole has been too long known by the horticultural world as an able florist, a genial and accomplished writer, and a true friend of gardeners, to need any recommendation from me; and as no society of men has done so much for horticulture as the leading nurserymen of London, so one who represents their interests ought to have a seat on the Council. If the Fellows of the Society who cannot be present will take the trouble to record their votes for these two candidates, together with Major Trevor Clarke, we may at last have some chance of practical horticulture having a voice in the Royal Horticultural Society.—C. P. PZACH.

THE mode of election of the Council of the Royal Horticultural Society reminds me very much of the old select vestries, who elected and re-elected themselves. For some years past the same persons seem to go on one year and go in the next, the changes being rung on a very small peal indeed. How often has Mr. Bateman, for instance, been off and on during the last ten years, just as if there was no other person sufficiently qualified for the office, and his presence was so necessary to the well-being of the Society. It is high time that the Fellows began to look a little more sharply into the constitution and management of the Society. Things have been a little too pleasant for the last few years, and the Fellows have been lulled into a state of false security. I hope that at next meeting there will be a little more interest manifested, and a little fresh blood infused—blood that will be vivifying as well as noble, and not noble unless vivifying. If I did not live so far from the seat of the Society's operations I would raise my voice, at the next annual meeting, against a system which has become prevalent of late of packing the Councils—I can call it by no other name—by gentlemen being nominated for the office who take no part in the Society's affairs, and who seem to regard themselves only as objects of ornament and not of usefulness.—ANOTHER OLD FELLOW.

PATERSON'S VICTORIA POTATO.

I CAN quite corroborate the testimony of "D., Deal," as to the merits of this Potato. I grew it the last season side by side with Dalmahoy, Red-skinned Flourballs, Lapstones, and Rinton's Early White Don; and certainly for crop, freedom from disease, and evenness of size, the Victoria far surpassed the others, followed, however, closely by the Red-skinned. The quality was superb: I think I never saw Potatoes boil more white and mealy, nor tasted them better flavoured. Although the Red-skinned Flourball has many good qualities, I do not like it for eating, as it always boils close and firm, with a rather earthy flavour on this soil. The order in which I place the above Potatoes is, Victoria decidedly first in all points; Dalmahoy and Early White Don nearly equal second; Red-skinned Flourball fourth; and Lapstone decidedly last.—D. P., *Middlesex*.

LOBELIA PUMILA GRANDIFLORA.

WHERE tested, what impression has this little beauty formed on the minds and flower gardens of your readers? Lobelias not being in demand with me, I have been unable to give it a trial. I certainly will take an early opportunity of doing so, as I was very much taken with its appearance on visiting Mr. Turner's Royal Nurseries, Slough, during the summer of 1871; there its charming appearance surpassed that of all other Lobelias. Returning to Scotland, I have never since been gratified with a glimpse of my captivator. From its aspect as seen there I fancy it would be most suitable to introduce for variation amongst carpeting subjects. Though I believe, with the partisans of fashion it is now quite illegitimate to combine flower and foliage plants, yet this, with its very dwarf compact habit and profusion of exquisite little bright blue blooms, would harmonise well in conjunction with the *Alternanthera*, *Golden Feather Pyrethrum*, &c. Apart from this, its compact growth would to a great extent exempt it from

damage through rain, and therefore prove a valuable substitute for such as *Lobelia speciosa*, *Trentham Blue*, *Quicksilver*, and others, which, with few exceptions, soon become straggling in growth and faded in bloom, especially in such a wet season as the past.—J. M. C.

RAISING ROSE TREES FROM LAYERS.

A FAVOURITE Rose of mine is *Gloire de Dijon*. We have no other Rose that blooms so freely except *Wm. La Mark* [*Noisette Lamarque*?]. Last year these two Roses bloomed from the 1st of May until Christmas, and I never wish to look on finer blooms. Our land is rich and loamy, which is in their favour; and I grow them from layers like *Carnations*, as I find they and the rest of the best Roses succeed in this way a great deal better than they do on the *Briar*.

This system I can recommend with confidence to all lovers of Roses for two or three reasons. They can be kept as low as *Geraniums*, or they can be trained up to a standard to any height by cutting the under shoots. They will live much longer, blossom more profusely, and there is no trouble with the suckers from the wild *Briar* as there is with the other standards.—WILLIAM GAIR, *Dibden Lodge, Southampton*.

FORMING A TERRACE.

THE formation of a terrace is, in its principal details, a work of line and rule—that is to say, it is a geometrical operation, and is, or should be, carried out strictly in accordance with the rules of geometry. A knowledge of this fact tends very much to simplify the work, especially in its earliest stages. Laying down right lines so as to impart proportions suitable to the position and in keeping with the most prominent features near the site, whether they be natural or artificial, is perhaps the most important fundamental law affecting this work. The effect of a noble building standing upon a well-made terrace is stately and chaste. The two form one grand harmonious whole, from which no part may be taken without affecting the remainder, for there is nothing irregular or out of place, but each part bears a relative value to the others. It is very important that there should be no incongruity in the situation of a terrace as regards its natural surroundings. Along the face of the steepest declivity or gentle slope it is equally in its right place, but it is not so when situated upon flat or low-lying ground, where it loses all its dignity, and becomes in reality what the dictionaries say it is, “a small mound or raised walk.”

It is hardly possible to lay down arbitrary laws or rules for such work, there being in almost every instance local circumstances and features which must be dealt with solely on their own merits. In this paper, therefore, I shall not attempt to enter much into minute details, but strive rather to set forth clearly such generalities as are most likely to occur in every case.

A terrace may be defined as a ledge or horizontal surface projecting from the side of a hill or slope. Having selected the site, attention is immediately given to obtaining soil where-with the work may be best carried out. This is a primary consideration of much importance, for the simple reason that the cost of the work depends in a great measure upon its nearness to the site, and the facility or otherwise with which it may be obtained. There are two ways by which soil is usually to be had—the one by taking it from the slope along the back of the terrace, and casting it forward till the front is extended to the required width, and the other by utilising the soil excavated for the cellars and foundations of a newly-built mansion. In the latter instance the material is usually so dead and infertile, that it can only be used to form a solid foundation for a layer of better soil in which the roots of turf, shrubs, and plants will flourish. To avoid any vexatious settling of the soil after the final dressing of the work, it should be pressed together as closely as possible, for which reason I very much prefer horses and carts to wheelbarrows, taking care to make the loaded carts pass as near as is safe to the outer edge of the terrace, where the greatest depth of soil is, and where, therefore, there is most risk of a subsequent settlement. From 9 to 12 inches of rich soil are requisite for the surface-dressing. In advising this I am aware that a rich soil for the turf of ornamental grounds is often objected to, on the score of its tendency to promote rapid and rank growth. The proper use of a mowing machine will correct all this, and I would rather have to mow three times a-week than see the large patches of parched turf that so often disfigure the best-kept lawns in summer.

The whole of the slopes should be of a uniform angle of 30° ; and the soil must of course be dressed to this angle before the turf is laid. The most expeditious way of doing this is to let the work spring from the upper or inner edge of the terrace, for if that is first made square and true, the bevel can be applied with equal certainty along its entire length. *Fig. 1* is

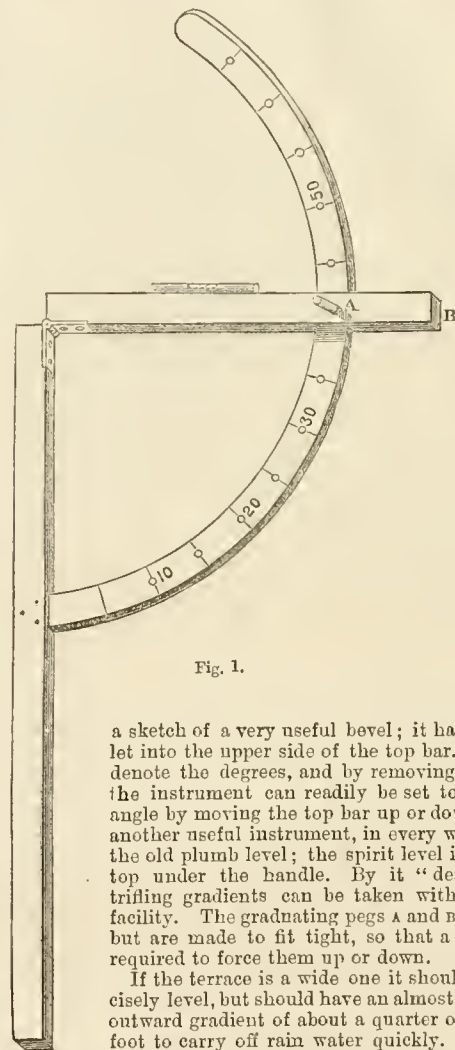


Fig. 1.

a sketch of a very useful bevel; it has a spirit level let into the upper side of the top bar. The figures denote the degrees, and by removing the peg at A the instrument can readily be set to the required angle by moving the top bar up or down. *Fig. 2* is another useful instrument, in every way superior to the old plumb level; the spirit level is let into the top under the handle. By it “dead” levels or trifling gradients can be taken with the greatest facility. The graduations a and b have no pins, but are made to fit tight, so that a slight blow is required to force them up or down.

If the terrace is a wide one it should not be precisely level, but should have an almost imperceptible outward gradient of about a quarter of an inch in a foot to carry off rain water quickly. In small terraces the proportion of width to length may be as 1 to 2, but in large works a greater width may safely be ventured upon. It is always more satisfactory to make the level surface too wide rather than too narrow. Nothing can appear worse than a building of even moderate pretensions standing upon a very narrow terrace, whereby all sense of dignity and repose is lost.

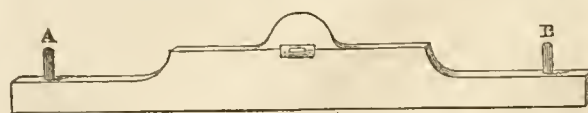


Fig. 2.

A certain air of formality always prevails about a terrace. This, however, may be so modified as not to be offensive. Chaste simplicity is not an incompatible feature in such a scene, but is desirable; and to effect which, flower-beds of simple outline and graceful form, a few Conifers, and vases or groups of statuary dispersed and yet arranged in definite order so as to maintain a rightful balance, are all that is necessary. Clipped hedges, very complicated geometrical designs, or a superabundance of costly architectural embellishment, are to be avoided, the aim being to avoid tameness or insipidity on the

one hand, and undue pretension or vulgarity on the other.—
EDWARD LUCKHURST.

LISBON BOTANICAL GARDEN.

ABOUT a mile and a half or two miles from the heart of the city of Lisbon, on high ground, is the Botanical Garden. The garden consists of two terraces, one above the other. The lower terrace contains nothing remarkable except a group of Date Palms (*Phoenix dactylifera*), one of which is about 45 feet high, which are now in various stages of flower and fruit. On the upper terrace are two glass houses, but in bad repair, and apparently not containing anything remarkable. But growing in the open air is a splendid specimen of the Dragon Tree (*Dracena Draco*), with a perfectly circular head of foliage, which must be 36 yards at least in circumference, whilst the stem is about 16 feet in circumference. The tree was covered with the dried remains of its fruit. *Aloe arborescens* is plentiful in the garden, and indeed all over Lisbon, and is now in flower. Also growing in the open air are *Musa paradisiaca*, *Ficus elastica*, *Euphorbia nerifolia*. There is a nice series of plants classified according to their natural orders, the Aloes and Cactuses being well represented; but the whole garden has been allowed to fall into neglect, and presents a dreary appearance, being overrun by weeds, and most of the beds are nearly choked. It is intended to abandon the garden as a botanical one, and remove as many plants as possible to the garden attached to the new Polytechnic School, but it is to be hoped that the *Dracena* will not be neglected. The flora generally which one meets with in Lisbon is most remarkable; Australian and Brazilian Acacias abound in all the gardens, and thrive and become large trees. There is quite a rage for *Eucalypti*, which are said to grow as much as 14 feet in height here in a single year. They are to be seen everywhere, and some species are at present in blossom. At Embia, in the neighbourhood, Tree Ferns grow in the open air; and in the grounds of the king's palace, besides *Chamærops* and *Phoenix dactylifera*, which are common in gardens about the town, *Jubæa spectabilis* and the Seychelle double Cocoa-nut Palm, *Lodoicea*.—H. N. MOSELEY.—(*Nature*.)

SOME PREDATORY INSECTS OF OUR GARDENS.—No. 40.

I VENTURE to commence this article with a bit of criticism. A rather celebrated American divine makes the following remark, at which I open my eyes as I read: "Gardeners know that fumigations of tobacco are inadequate devices for getting rid of aphides that cluster on plants. The truest remedy for these things is to make the plant outgrow them. Give it nourishment, so that it shall grow faster than they can take possession of it, and its growth will deliver it from all insect invasion." Then follows a moral lesson appended to the illustration, which lesson is true enough, though I question the horticultural assertion, which seems to be one of those hasty generalisations which very able men are sometimes betrayed into. However it may be in certain instances, it is a mistake to suppose that, as a rule, weak and unhealthy plants are the resort of destructive or injurious insects. The particular group named (aphides) are often found on vigorous plants and shrubs, and "fumigations," &c., are not so bad as remedies after all.

Fern-culture is a branch of the science of gardening carried on with great effect, and regarded with much interest in the present day, being pursued both out of doors and under cover. Even the common Brake Fern (*Pteris aquilina*), so familiar to the stroller upon heath or common, is sometimes used with effect, mingled with others of the tribe, to give a picturesque aspect to the rockery or artificial hill. This species is the resort of certain caterpillars of the Lepidopterous order, and these, I have no doubt, would most of them devour the leaves of nearly-allied species. I think it was in 1866 that the caterpillar of the Broom Moth (*Hadena Pisi*) swarmed upon the Brake growing about London, and the dealers in insects were plagued with persons who brought them bags full of these creatures, and expected payment for them as curiosities. For, though taking its name from the Broom, in Britain the species seems to prefer this Fern as its food plant. The caterpillar is undeniably handsome, being striped as follows:—First, a broadish olive-green stripe down the back, which is freckled with black points, then on each side of this a narrower stripe of yellow; beyond this comes another stripe of olive green,

also marked with black, and then another narrow stripe half white half yellow; the legs, claspers, and head are pale green. These are generally to be found feeding in August, and upon the first alarm they quit the twigs and fall to the earth. When I first discovered these I took them to be the caterpillars of the Aster Shark (*Cucullia Asteris*), a much scarcer species, to which they have some resemblance, but my swans turned out to be geese! The moth is on the wing in June, and it belongs to that division of the *Hadenæ* which have no dark streak from the base of the forewings, nor a pale blotch on the costa. From *H. oleracea*, which it closely resembles, *H. Pisi* is distinguished by having a transverse waved yellow line parallel with the hind margin of the forewings, and spreading into a blotch at the angle; in some examples this line is lighter in colour; this generally accompanies a deeper shade of brown, ordinary specimens having the ground colour reddish brown.

Another pretty little moth which has been found on several species of Fern, and which in gardens occasionally feeds on a variety of low-growing plants, is that designated the Small Angle-Shades (*Euplexia lucipara*). In the perfect insect the abdomen is conspicuously crested; the forewings toothed at their edges, of a greyish rosy hue, crossed by a deep brown, almost black band, in which the renal spot shines conspicuously. This moth is less variable than are many others of the *Noctua* section. The caterpillar occurs throughout the summer, but more towards its close; I have rarely found it feeding in the daytime. In appearance it is very velvety, with a slight hump on the twelfth segment, the head small and shining; the colour is some shade of green, sprinkled over with a few white points; on the back are darker markings, which are said sometimes to form a series of lines V-shaped, but which for the most part are indistinct. The adult caterpillar enters the earth to become a pupa, this state lasting through the winter and spring. Like the preceding moth (*H. Pisi*), this species is much commoner some seasons than it is in others.

With the imago of another species attached to the Brake I am well acquainted. The caterpillar I have not observed; it seems to be distributed throughout England. This moth is the Brown Silver-line (*Panagra petrarica*), taking its English name from characteristic lines which cross the pale brown of the forewings; the hindwings are greyish white, with a peculiar glossiness. The caterpillars of this species are "loopers," having only four claspers; they are stated to be of an olive green above, which shades off into white towards the spiracles; across the white portion runs a series of chocolate lines, while from head to tail are other and darker lines. The moths sit with expanded wings upon the fronds of the Brake in May and June; I have also seen them take considerable flights in the daytime, contrary to the usual habit of moths. The caterpillars are reported to occur in May; if so, it must be at the commencement of the month, and they would injure the young fronds were they numerous.

On some exotic Ferns *Acari* have been found rather numerous; on their economy, however, I do not enter, since they do not, in my opinion, rank amongst insects. Let it be observed here that Ferns grown in cases, exotic or otherwise, do, as a consequence, escape the attacks of many enemies, though they are liable to diseases, the germs of which are more readily introduced than the eggs of insects. The larva of a small fly of the Dipterous order has occasionally injured the fronds of some one or two of the more succulent species, but its economy has not as yet been worked out. Mr. Newman has communicated through the pages of the "Entomologist" some curious facts observed by himself regarding the history of a Saw-fly larva, which infests the leafstalks of the Lady Ferns. While feeding it forms lateral apertures in the stalk, and the result of these is an exudation of a mass of white froth, perhaps designed by Nature to defend the insect from some foe, as it does not seem to be connected with the life of the larva, as in the case of the Cuckoo-spit (*Tettigonia spumaria*). Mr. Newman has not informed us whether he has reared this species to maturity; of the habits and appearance of the larva, he says, "Having removed the froth, which is excessively sticky, adhering to the finger as tenaciously as a saccharine preparation like marmalade, I found the stipes discoloured, and of a dark brown colour instead of a vivid green. On opening the stalks I found in each a single Saw-fly larva. On being ejected, one of these threw itself on its back, turned over and over, and wriggled on the paper with much vigour and activity. The appearance of the larva is strictly maggot-like, the colour

transparent white, with a reddish brown median shade, which is probably due to the presence of food in the intestinal canal. It has six legs, but no claspers. The mass of snow-white froth exuding from the stalk of the Fern is frequently $1\frac{1}{2}$ inch in length."

I suppose we have most of us heard the story about the baker's man who took a cruel delight in smashing every "black-beetle" he came across, but who paid a fearful penalty for his malignity, since one night, when he was asleep on the sacks, lying with his mouth open (which nobody should do under any circumstances), one of these insects took advantage of the opportunity to enter, and—choked him! I noticed the other day a record of a case somewhat analogous, which may serve as a caution to horticulturists. An individual, who was greatly annoyed by the presence of the "thrips" in a house, set to work diligently to pound-up a quantity of the leaves of the Cherry Laurel in order to destroy them. Before long the odour took so great an effect upon him, that it was as much as he could do to crawl out into the open air; and though the fumes killed the insect, they also stripped the leaves from a number of plants. The best mode of attacking this troublesome visitor in the stove or conservatory is by means of sulphur, which may be applied in several ways; many prefer using the sulphurator. When it is burnt in a house it must, of course, be at a time when there are no leaves upon the plants or trees to be exposed to its influence. A mixture of sulphur and soap serves to "settle" many individuals if applied to the branches of the Vine and Peach, and walls may also be painted with it. Even copious syringing with water is of some utility. In the open air those plants infested with thrips should be dosed with a mixture of sulphur and water, applied in the usual way.

These insects, from their minute size, often escape observation, and it is hence that in some instances they do much damage, and they seem to be partial to the company of the equally disliked "red spider." Throughout all their stages of larva, pupa, and imago, the species of thrips are equally active, though it is to be presumed most destructive as larvæ; the imagos in some species have the power not only of running but of leaping. Some species are wingless in their perfect state, others have four narrow wings, which lie down the back, and are fringed with hairs. The eyes are conspicuous, and in addition to the compound eyes there are usually three simple eyes, or ocelli, placed in the crown of the head. If we take up one of these and turn it over upon its back we are then able to see, by means of a low magnifying power, the instrument by which it does



Thrips Adonidum.

so much execution. The principal organ of the mouth is a short conical rostrum, which is slid down towards the base of the forelegs when not in active service. The legs have no claws, but they are furnished with a small vesicle or bladder at the extremity. Thrips Adonidum is, probably, of exotic origin, since it more particularly attacks tropical plants, adhering to the under side of the leaves, which it pierces. This insect also secretes a black and glutinous fluid, which falls upon the leaves; and though each drop is exceedingly small, by the effects of a number of them the pores are closed and the leaves wither off. We may find in spring both larvæ and pupæ, and also perfect insects not long emerged from the pupa, and preparing to continue the species. The larva is white or dirty yellow, while the imago is of a dull black, its wings being edged with white. The nearly allied species, *T. ochraceus*, is narrower in the body, and more of an ochreous tint. This is partial to the fruit of the Plum as well as to the leaves, and most active, like the preceding, just at the time when it is not so easy to operate upon it as in the autumn or winter. Both seem to delight in a high temperature, especially if it is dry also.

The limits of space require that this paper should not be further extended, although it be the closing one of a series, in which no attempt has been made to present a complete account of the various insect enemies with which the gardener has to

contend, yet in which, nevertheless, it will be found a very considerable number of species have been commented upon, and few of any importance passed over. Partings are always more or less painful; even between a contributor to a periodical and his unknown reader a bond forms, which can hardly be severed without some regret on both sides should the former have attempted to do his duty. In this case, however, there is little to be said in the matter, since the writer hopes to meet the reader again shortly, and present him with matter as useful, and, perhaps, more attractive. Until then, *Vale!*—J. R. S. C.

A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 1.

THIS order of plants has always been greatly admired, but they are no longer the exclusive luxury of the wealthy amateur, for the immense quantities which have been brought home to this country during the past ten years have been the means of reducing their prices to such an extent, that anyone who can afford to buy a Geranium or a Fuchsia can for almost the same money purchase an Orchid. This fact has been the means of enabling amateurs with limited incomes, who had previously been compelled to admire and worship these gems of the vegetable world from afar, to enlist themselves in the ranks of Orchid lovers and Orchid buyers, and where twenty years ago ten collections of these plants could be found, treble the number now exist, each having very creditable selections. Another result has also been brought about by the more general diffusion of Orchids, and consequently a greater knowledge of their wants and requirements, and that is the almost-disappearance of the bigoted and arrogant Orchid cultivator, who in the early days of the introduction of these plants considered any gardener or any garden entirely beneath his notice if there were no Orchids; indeed an intimate acquaintance of mine some twenty years ago, who had become so lifted up with pride after having had a collection of Orchidaceous plants under his charge for twelve months, assured me in sober earnest upon one occasion, that he "was quite disappointed with a certain nobleman's garden, for there was no plants in it." Now the fact was, that of stove and greenhouse specimens there existed a good collection, but as he saw no Orchids the place was not worthy of his notice, and I am afraid some such feeling has led to the neglect of many good old plants which have now become so scarce in our collections. The extended cultivation of Orchids has exploded the fallacious idea that they are difficult to cultivate, the truth really being that, providing a little common sense be brought to bear upon the subject, they may be reckoned amongst the most easily grown plants which we have in cultivation. I trust none of my readers imagine this is written in any spirit of depreciation, because exactly the contrary is the fact; for having been amongst these plants some five and twenty years I have learned to love them all, from the mere botanical thing of the professed Orchid-grower to the large and brilliant-flowered Cattleyas. Neither would I have my brother gardeners imagine that I wish to undervalue their services—far from it. I am fully persuaded that those gardeners who live entirely in the atmosphere of the Orchid house, as they do where large collections are grown, are not only worthy of their hire, but are not sufficiently remunerated for the rheumatic aches and pains which are sure to follow a long devotion to them exclusively.

The object of these brief notes is to extend the cultivation of Orchidaceous plants amongst amateur horticulturists, by, in the first place, showing that they are not difficult to grow, that no special house is necessary for their accommodation, and that if treated in a rational manner no ill effects are to be dreaded to the constitution of the cultivator. The cool treatment of Orchids is now fairly recognised, and I can speak of the beneficial results of such treatment with every confidence, having grown them on this principle long before its adoption by either Mr. Bateman or Mr. Veitch; indeed the last-named gentleman, after coming several times to see the plants under my treatment, declared it was the great secret, and at once set about adopting it. The great success that eminent firm has had is well known; nevertheless, there is little credit due to anyone for the discovery of the cool system, as it came about by accident. In the first place, inability to keep the house up to the recognised standard led to a wonderful improvement in the health of the plants. This silent hint was taken, and we never tried to force the fires afterwards; and when through close observation we had become satisfied, that our system was correct, it was

very rarely indeed that air was excluded throughout the whole season, but it was warmed by its passage over the pipes before entering the house. On this subject I wish to say a few words to amateurs who generally err on the side of exclusion of air. Now, as I before remarked, if a little common sense is exercised in the cultivation of these plants, the amateur will recollect that the majority of them grow naturally high up on the branches of forest trees exposed to all the winds that blow; how, then, is it necessary that under cultivation no air, or at most very little in a usual way, is allowed them?

Another idea I wish to dispel from the minds of beginners in Orchid culture, is the impression that a separate house is absolutely necessary: such is not the case. In a state of nature Orchids are associated with an immense variety of plants, and consequently it cannot be essential to their well-being to isolate them from their brethren belonging to other orders; indeed, I am fully persuaded that when shut-up by themselves, the coriaceous texture of their leaves does not allow of their absorption or preservation of a proper or sufficiently good atmosphere, and therefore that by mixing other plants with them the air is much improved, and consequently the Orchids reap the advantage. I am not speaking or writing theoretically but practically, and I know from experience that they thrive admirably with other plants. Take, for instance, *Odontoglossums*, *Masdevallias*, *Lycastes*, and many others—how admirably they succeed, and how beautifully they grow and flower in the company of a collection of New Zealand and Australian Ferns! It has been frequently said and written that the genera above named, and many others from the New Grenada mountains and forests, will succeed well in an ordinary greenhouse. Now I object to such a term being used, because it is apt to mislead the amateur and lead to failure; a first failure often leads to disgust, and the plants are discarded and voted a bore. This is because most amateurs understand by the phrase of an ordinary greenhouse the structure in which they grow their *Pelargoniums*, *Fuchsias*, *Verbenas*, and such like plants, and, indeed, such an interpretation of the term is perfectly justifiable; but I maintain that no Orchids can be made to thrive under the same conditions as those plants require, and that the dry atmosphere and open front sashes would soon parch the life out of any epiphytal Orchid subjected to such treatment—even those who have tried the experiment of growing them in the open air in Europe, have provided them with a far moister atmosphere than that of an ordinary greenhouse. But interesting and beautiful as the terrestrial Orchidaceous plants from temperate climes are in our open-air ferneries, I am not a believer in the idea of tropical epiphytal species ever becoming sufficiently showy to warrant the risk and trouble of cultivation in the open air in this country, although it has been proved by the Messrs. Backhouse, & Son, of York, that some species will withstand several degrees of frost with impunity, and in all probability there are many other kinds equally hardy. This, however, I consider only as an interesting fact, and really of no practical importance, for it is one thing to see plants making the best of a bad situation, and another to see them growing vigorously and luxuriantly in a congenial one. A more striking and familiar example can hardly be adduced than that of the common Hart's-tongue Fern. This plant is frequently found growing upon walls and old ruins, but in such situations it seldom exceeds a few inches in height, and generally presents a brown and parched appearance during summer; but who would be bold enough to assert that it bears any comparison to the luxuriant and finely developed fronds which are formed when the plant grows in some moist and shady dell? Such also, I maintain, is the case with the culture of epiphytal Orchids in the open air. They may live and grow, but they will always be miserable objects compared to those grown within-doors, even without the aid of artificial heat.

Those Orchidaceous plants which have come to be denominated cool Orchids are mostly natives of the high mountain ranges and table lands of Guatemala, Mexico, Peru, and New Grenada, where there is a cool, moist and genial climate, perhaps seldom rising so high in temperature as we experience in England, and certainly never subject to the great extremes and sudden changes of a climate like ours, for this in many instances, and not the great cold, is really the cause of many plants from elevated regions of tropical countries failing with us in the open air. The forests of these mountains, we are told by those who have visited them, abound in Orchidaceous plants, comprising not only those species and varieties which have already been established in our collections, but numerous

fine kinds which are as yet new to science. This assertion is well borne out, and its truth verified, by the introductions which are continually reaching us from these districts. In consequence of the difficulty which in former years attended their transit through the hot regions having been overcome in a great measure, large consignments have come to hand in good order, which has caused prices to be so greatly reduced that Orchids can now be purchased at as low a rate as any other stove plant, and as they require so little fire heat they have become accessible even to those with very limited incomes. The fashion having run so much upon New Grenadan and Peruvian Orchids has, however, had the effect in a great measure of diminishing the cultivation of their East Indian relatives, which I cannot help regretting, because really such plants as *Aërides*, *Vandas*, *Cymbidiums*, *Saccolabiums*, and many others are extremely ornamental when well grown, even without flowers; and I cannot but think that many growers have discarded these plants without giving it a thought that Asia as well as America abounds in lofty mountain ranges, and that quantities of these plants are to be found in the humid forests and ravines of these regions also, which would thrive under much cooler treatment than is usually considered necessary for their well-being in this country. What, however, must be the condition of plants that grow in the damp forests upon the spurs of the Himalayas? Some of my friends residing there say we are in the district of *Vanda cærulea*, *V. Cathcarti*, *Pleiones*, *Saccolabiums*, *Aërides*, and many other fine things, and yet during six months of the year it is cold enough to render a fire in the house quite comfortable; and I have myself proved by experience that the great majority of East Indian Orchids in cultivation will thrive and flower much better with a night temperature in winter of 58° and 60° than when subjected to a higher régime. I, of course, make an exception to such plants as most of the *Phalænopsis* and some others from the low grounds in the islands of the Indian Archipelago and Burmah; but the number of fine species, especially *Dendrobiums*, *Aërides*, *Saccolabiums*, *Cælogynus*, *Vandas*, &c., which come from the hill districts of those islands, from Assam, the Neilgherries, and the Himalayan forests, may, without doubt, be grown far better than we usually see them, and at a much lower temperature than is considered necessary by most cultivators.

It is my purpose in these brief remarks to enumerate cool Orchids only, but not to confine the list to western species, for I wish particularly to impress the fact upon the mind of amateur Orchid-growers, that because they are told certain species are natives of the eastern hemisphere it does not necessarily follow that they must grow in the steaming jungle or upon the parching plains. I shall, however, describe only good showy or ornamental kinds, not taking into consideration the newest or most expensive sorts. With respect to the remaining East Indian kinds not included in this article, which do require more heat than is recommended here, I am quite sure from experience that they may be grown well far below the temperature deemed requisite by many growers; indeed I know of nothing which tends to disgust an employer so much, or which is so ruinous to the constitution of these plants, as the gigantic Turkish baths or stew-pans which many gardeners make of their Orchid houses, and which, I am fully persuaded, has led to the discontinuance of their culture, especially where the fair sex have been concerned.

Cool Orchid houses should be kept much lower in temperature at night than during the day, and the atmosphere must be well charged with moisture; and when the edges of the leaves are found in the morning loaded with crystal-like drops of water, the amateur may be sure the condition of the house is exactly suited to the requirements of the plants. I consider it one of the most charming sights to a plant-grower, independent of the satisfactory feeling it produces upon the mind, to see plants thus loaded with dewdrops. The first section of these plants which I shall bring before my readers are essentially cool Orchids, and I recommend their cultivation in company with New Zealand and Australian Ferns, or, indeed, any Ferns from cool latitudes; for instance, the Madeira and Canary Island species would thrive well with them, saving a few exceptions, so also would the mountain species from South America and Northern India. The temperature and atmosphere suited to the Orchids would be just that in which the Ferns would also thrive, and at the same time would not be injurious or fatiguing to the most delicate constitution. Tastes, however, differ considerably; and whilst some of my readers, like myself, may be enthusiastic admirers of Ferns,

others may prefer ornamental and variegated-leaved plants, Palms, &c. Be that as it may, both may indulge their tastes, or a compromise may be made, and some of both grown with an equal chance of success. There are, however, but very few flowering plants that form satisfactory companions to Ferns and cool Orchids.

The second section which I recommend my readers are plants that should not be subjected to a lower temperature in winter than about 48°—at least such has been my experience with them. These may have some ornamental-foliaged plants and warm-country Ferns mixed with them; they improve the atmosphere, and produce a pleasing effect in the general arrangement of the house. Indeed, amateurs who may be the fortunate possessors of a vinery will find those species and varieties included in this section thrive extremely well in such a structure; the leaves of the Vines will afford a sufficient and agreeable shade from the sun's rays during summer, and when they fall away in autumn, ample light will be obtained for the Orchids during the dull winter months.

It will also be necessary to say a few words respecting soil and potting. As a general rule, it may be accepted as a fact that a mixture of rough fibrous peat and good living sphagnum moss in about equal parts will be found to suit them well; add to this a few pieces of charcoal and a little sharp sand, and when mixed it will be ready for use. In potting, see that the pots are quite clean and dry before using them; and if new pots are to be employed, let them lie in water for twenty-four hours before they are required, in order to get them saturated with water, otherwise they will materially injure any young roots which may come immediately in contact with them. The pots should be filled about two-thirds up with drainage material, which should be perfectly clean potsherds and a few large pieces of charcoal, and upon this the soil may be placed. The plant should be raised upon a small cone-like mound of soil a little distance above the level of the rim, and the base of the plant should be upon the top of the mound. This elevation is necessary in order to allow the water to quickly pass away from the pseudobulbs, and thus prevent decay. Care and judgment must be exercised, however, in this operation, for if the cone of soil is carried up too high it becomes excessively ugly; whilst, on the other hand, when properly done it has a very pleasing effect, more particularly if a layer of living and growing sphagnum moss is placed over the surface, and a few plants of the small but beautiful Sundews planted amongst it. I have been often asked my opinion respecting the boiling of the sphagnum before using it for potting, the object being to destroy any slugs or members of the small-shelled genus *Zonites* which sometimes are found in tolerable abundance amongst it when fresh gathered; but I must and always have had the greatest objection to the practice of boiling, for I love to see the moss growing, and at the same time I consider the more life that can be maintained contiguous to the roots of these plants, the more vigorous will be their growth; and I would sooner spend a week in the careful examination of a batch of fresh-gathered moss, and pick-out the enemies with my fingers, than plant a single Orchid in boiled sphagnum.

The treatment of Orchidaceous plants includes nothing difficult to either learn or practise, and anyone who really loves his plants will soon become a sufficient adept to see if the treatment is in accordance with the requirements of each or any particular species or variety. In general it may be accepted that, whilst growing, an abundant supply of water is absolutely necessary to their well-being; for it is upon the humidity of the atmosphere, and that alone, that they subsist. After growth is finished many kinds require the water supply to be entirely withheld, whilst others will not suffer their roots to become dry at any season with impunity; but as I shall treat upon these peculiarities in detail as the various genera and species come under notice, it is not necessary to dwell upon the subject at greater length in this place.

Another thing will be worthy the attention of amateurs, and that is more care than is usually bestowed upon their plants when in bloom, for I have frequently observed that they do not derive that amount of pleasure from their plants when in bloom, which it is possible to obtain with a little forethought and care. There are two reasons which bring about this state of things. The first is the practice of allowing the plants to grow and flower in the same situation; the consequence of this is, that as the temperature and atmosphere are maintained in the same state for the sake of the majority of the plants, the air is far too densely charged with moisture to allow of the flowers lasting long. Another cause which I have frequently observed

destructive is the syringe being used carelessly, and thus the flowers are wetted daily, and, in consequence, soon become spotted, and fade away much more quickly than they would have done if carefully preserved. The question then arises, What must be done to enable amateurs to reap the full benefit of their flowers? To remedy these defects the best plan undoubtedly is to provide a small house in which a somewhat lower temperature and drier atmosphere is maintained, and where the syringe is not used; but at the same time it should be borne in mind that dryness in the atmosphere should not be carried to extremes, or the evil will be as great, although brought about by directly opposite causes; therefore sufficient moisture must be maintained in the air by pouring water upon the floors and stages. This remedy, however, is not within the reach of all amateurs, therefore the next best plan is for the cultivator to set apart a portion of the house in which all plants in bloom may be grouped; this should always be the coolest end of the house, and, to give a graceful and varied effect, a few Ferns, Palms, and other ornamental-foliaged plants should be mixed with them. Growing Orchids is entirely undertaken with the idea of the production of flowers, and consequently it behoves the cultivator to reap the utmost pleasure from them compatible with the health of the plants. In conclusion I may add, that in consequence of the thick fleshy texture of the majority of Orchid blooms, they last an immense time when cut and placed in vases for the decoration of the drawing-room or boudoir, and that they form exquisite and chaste ornaments for dressing a lady's hair, especially if backed lightly with a sprig of *Gleichenia* or Maiden-hair Fern.—EXPERTO CREDE.

ESTABLISHMENT OF LORANTHUS EUROPEUS AT GLASNEVIN.

VALUABLE, interesting, and many as have been Dr. Moore's contributions to science, with none of them, perhaps, will his name be more intimately associated than in connection with the successful experiment the details of which he made public in the very interesting paper on the establishment at Glasnevin of the *Loranthus*, both on the common and Evergreen Oak, which he read at a meeting of the Royal Dublin Society. It appears from what he stated on that occasion that his efforts to establish the *Loranthus* were by no means of recent date. More than twenty years ago he got his friend Mr. Bellenden Kerr to procure seeds of it and have them forwarded to Glasnevin from Vienna. The seeds duly arrived, and we believe in good condition. They were duly attached in various ways to different parts of Oak and other trees, and every care taken to insure success, but, after looking fresh and well for a considerable time, they ultimately dropped off.

In 1869, on occasion of the great Horticultural Congress, Dr. Moore visited St. Petersburg, where, among the assembled *savans*, he met the accomplished Professor of Botany at Vienna. In compliance with a request then made, this gentleman in due course forwarded to Glasnevin, not merely berries of the *Loranthus europæus*, but a fine specimen of it on a small Oak branch, and laden with berries. The bunch was suspended and otherwise secured within a barrel, and thus safely transmitted to Dublin. Having previously failed to get the seed to germinate on the bole or other branches, though tied on the inner bark as well as the surface, it luckily occurred to Dr. Moore to try them on the soft young wood. He did so, attaching them to the spot from which a bud had for this purpose been removed. After some months, hopeful indications of success were manifested, and in the course of 1870 Dr. Moore had the gratification of seeing his efforts crowned with success, and *Loranthus europæus* at last numbered among the many living plant varieties to be found at Glasnevin. Its progress in the young state is remarkably slow, and, moreover, this species, unlike our *Mistletoe*, being deciduous, the plants established at Glasnevin, both on the common and Turkey Oak, are as yet, more especially at this season, not very conspicuous objects. We congratulate Dr. Moore and the noble institution with which he is connected on the success of his experiments. Interesting, no doubt, as it is, looked at from the botanical and scientific standpoint, it is even more so when viewed in its horticultural aspect. We are induced to regard the success in the present instance as the forerunner of other successes in the same direction, which will result in the introduction and successful cultivation in our stoves and green-houses of some of the gorgeous Indian *Loranthus*, which are at once the wonder and admiration of scientific travellers, cloth-

ing the fostering tree on whose juices they live and batten, with dazzlingly brilliant flowers, and a beauty not their own.

THE success achieved by Dr. Moore in propagating and establishing *Loranthus europæus* at Glasnevin will, no doubt, attract considerable attention among horticulturists and physiologists. The occasion, therefore, should not be let slip without availing of it to urge on those interested or engaged in the introduction of new and beautiful plants, the desirability of directing their attention to the *Loranthi* of India and other lands. Mr. Moore's success with the European species augurs favourably for similar successes, where, as in his case, failure had been confidently pronounced. As Dr. Moore related the other evening, when in January, 1870, Dr. Fenzl, Professor of Botany to the University of Vienna, sent him the fine berry-laden specimen of *Loranthus*, from the seeds of which the young plants now on the Oaks at Glasnevin originated, the professor was by no means encouraging. In fact, he stated candidly that he thought the attempt to get the berries to grow would be a failure, as he had never known any instance of the plant having been propagated artificially save once. But surely what could be done once may be done again and again. Well, as regards extra-European *Loranthi*, there have been pronouncements equally discouraging, and, as we hope ere long, to be proved equally fallacious. The late Dr. Lindley, writing some twenty years ago encouragingly with regard to the introduction of a pseudo-parasitic *Loranth* *Nuytsia floribunda*, the Fire Tree of the Swan River colonists, said among other discouraging words, "There is no hope of our ever beholding in Europe the magnificent *Loranthus bicolor* of Bengal, or any of that singular tribe, which to the habits of *Viscum* add the flowers and colours of our finest Honey-suckles;" and again, "True parasites are beyond our attainment, and we shall no more see *Loranthi* in hothouses than humming birds in aviaries."

We do not know on what ground Dr. Feuzl augured want of success; but in the case of Dr. Lindley it was chiefly because there was no means of having in our plant-houses trees or shrubs of sufficient magnitude to support and nourish these flowering parasites. Now, we rather wonder that Dr. Lindley should have regarded this as the obstacle, inasmuch as, from the statements of scientific travellers and others familiar with them, these *Loranthi* by no means affect trees of large growth, or with dense or heavy foliage. On the contrary, some of the most gorgeous-flowering species are found on very low-growing, slender, twiggy shrubs. So that this difficulty is purely imaginary.

The real difficulty, if any, is, as we apprehend, in getting over the berries in good and vegetative condition. Perhaps, when he penned these words, Dr. Lindley also had this in view; but Mount Cenis was not then tunnelled, nor the isthmus divided by a highway for ships. In our day intercourse with India is so facilitated that there ought to be no great difficulty in getting berries fresh and in condition by post, or, with better chance of success still by the ordinary quick route, berry-laden specimens, such as and packed in the same way as that forwarded from Vienna to Glasnevin; nay, with present facilities, is it even beyond the range of possibility to bring safely to Europe living foster plants with the parasite growing on them? These foster plants are not necessarily large. The late Dr. Welwitsch in his interesting paper on the *Loranthaceæ* of Angola, which will be found in the "Journal of the Horticultural Society, South Kensington," just issued, says that on one occasion he found a small bush of *Gossypium microcarpum*, only between 2 and 3 feet high, bearing on its slender branches several stems of a pink-flowered *Loranthus*, nearly a foot long; and that on another occasion he met several low shrubs of *Tamarix articulata*, of which nearly every main branch was adorned by dense patches of a pretty *Loranthus* with splendid yellow flowers.

The same Dr. Welwitsch, so familiar with these *Loranthi* in their native haunts, and equally and practically familiar with the introduction of rare plants to Europe, did not, with Dr. Lindley, regard the former as beyond our attainment in cultivation. On the contrary, he tells us that it was with a view "to encourage and perhaps to facilitate their future introduction to Europe" that he wrote the paper from which we quote, and in which he says the introduction and culture of these interesting parasites form worthy objects of attainment by skilful and persevering horticulturists. Mr. McPherson, a gentleman also conversant with these parasites in Southern India, where he tells us they grow only too luxuriantly from the sea level

to 7500 feet and upwards, is no less sanguine as to the prospects of their being successfully introduced and cultivated in Europe. Writing to the *Gardeners' Chronicle* towards the close of 1871, he offers the following hints with regard to their introduction:—"I would advise anyone attempting to introduce *Loranthi* to gather the seedling branches and pluck off the leaves (as they might ferment and get mouldy), retaining the berries in as perfect and unbroken state as possible, so that the glutinous matter may be preserved, and pack the branches in a rough box with sand, pounded bricks, or charcoal. Looking to the fact that a parcel may be received through the post or otherwise in a month or less from the date of packing, there ought to be little difficulty in at once getting to work at the experimental cultivation of *Loranthi*." Mr. McPherson further suggests that the packing case should have air-holes in it. Here, then, is a field for gardening enterprise and skill. Who, among our wealthy and spirited amateurs, scientific and energetic directors of botanic gardens, or the caterers of new plants for the public, the Veitchs, the Bulls, the Williams, Dicksons, &c., will be the first to enter on it and work it successfully? We have long wondered it has not been attempted ere now, and never had misgivings as to ultimate success. With regard to the trees and shrubs which they will grow upon, tropical *Loranthi* are, we believe, as accommodating as is their European counterpart, the Mistletoe. So when anyone is fortunate enough to get the berries, he need scarcely fear not having subjects at hand that will accommodate and foster the pretty parasite. The berries may be attached just in the same way as are those of the Mistletoe.—(*Irish Farmers' Gazette*.)

PROMOTING WOOD-RIPENING.

As long as wood is growing, it is very evident it cannot ripen. To arrest growth, water must be withdrawn. A wet warm autumn encourages growth and non-ripening. We have little control over trees planted in the open ground. In some measure we can control growth and cause ripening of the wood—i.e., by cutting the roots; and we have some very good instances of this system of cultivation at the present time, where the roots were cut in September last, and the fruit trees are now a mass of bloom-buds. The object of this communication is to show the effects of throwing off the deluge of rain during the last three months of the past year from forty-six large tubs containing Peaches, Nectarines, and Apricots, and also to explain an easy mode of doing this.

I will explain the mode first. Most of these trees were allowed to remain in the orchard houses to ripen their fruit; but some were taken out in June and ripened their fruit out of doors, and the flavour of the latter exceeded that of the trees in the houses. All these trees were placed outside the houses at the end of August. As soon as the wood was well formed, two pieces of creosoted boards were placed in a slanting position on each tub so as to throw off the rain; the effect of this was to cause all the wood to become of a black-red colour, that of the trees in pots in the house being still green and unripe, though they are fast coming into bloom. Fifteen of the above plants are now in full bloom and forming fruit. They are in the double-glazed house, where a temperature of from 45° to 55° has been sustained during the winter by the combustion of roots and other rubbish.—OBSERVER.

RAMIE GRASS.—Considerable attention is now being given by the planters in some parts of the Southern States of North America to the cultivation of Ramie Grass, which grows well in Florida, Georgia, South Carolina, and, in fact, almost anywhere from latitude 33° southward to the Gulf of Mexico. In Louisiana some of the planters are replacing the Sugar-cane with Ramie, which does not require replanting, demands comparatively little labour in cultivation, and entails no great expense for machinery to prepare it for market. So far as known, it has no insect enemies, its fibre is less bulky and more easily transported than cotton, and it is sure of a ready sale at remunerative prices. At present the fibre sells in England for 240 dols. per ton of 2000 lbs., or 8½ cents. per pound. Ramie, or Chinese Grass (*Urtica tenacissima*) is a plant of the Nettle family, which grows spontaneously in British India, China, Java, and other eastern countries. The fibre, which forms its commercial product, is the inner bark of the stem, and when exposed to view by separation from the husk, presents a brilliant pearl-white lustre. The fibre is longer and more uniform than any other, except silk; it is stronger and

more elastic than either Hemp or Flax; takes colour as well as a good quality of silk; and, when properly prepared from the raw material, may be spun into fine yarns suitable for mixing with wool in the manufacture of delaines, worsteds, and other light fabrics. Without admixture it can be woven into fabrics which, it is said, will surpass the finest linens in beauty, strength, and durability. The Ramie fibre has also the felting quality superior to either fur or wool.

ORNAMENTAL GLASS CASE.

THE Wardian case was so called after its inventor, N. Ward, Esq., who, living in the city of London, was enabled by the aid of this case to cultivate amidst the dust and smoke of the metropolis some of the rarest of our greenhouse and stove plants. He published a very useful pamphlet upon this mode of cultivating them. To prevent the dew which is occasionally deposited inside the glass, it is only necessary to open the case frequently, for a few minutes, to render the temperature within similar to that outside. They are not intended to exclude the air, and the engraving annexed is one of the most ornamental.

Mr. McIntosh thus describes the construction: "The sides of the box are of mahogany, $1\frac{1}{2}$ inch in thickness, and the bottom of deal, $1\frac{1}{2}$ inch thick, well framed and dovetailed together, and strengthened with brass bands, and with two cross-bars beneath. The upper edge of the box is furnished with a groove for the reception of the glass roof, and this groove is lined with brass, to prevent the wood from rotting. The roof is composed of brass, and glazed with the very best flattened crown glass. The brass astragals are grooved for the reception of the glass, and not rebated, as in ordinary glazing. Eyed studs are cast on the inner side of the ridge astragal, about half an inch in length, for the purpose of suspending small Orchids or Ferns from the roof. The inside of the box is lined with zinc, and at one of the corners an aperture is formed into which a copper tube, 2 inches long, is inserted, and furnished with a cock for withdrawing any superfluous water that may at any time accumulate within the box. One of the panes is made to take out—this provision is necessary for the occasional arrangement and airing of the plants, but the general arrangement is made by lifting the top off entirely."



treatment goes a long way towards the high finish of Grapes, if all other things have been going on right through the early part of the season. Some may object to ripening Grapes so early that have to hang so long; but they will keep as long, if not longer, than those ripened six weeks later. What has caused the complaint this winter of Grapes not keeping well? The want of sun and heat to finish them properly the past cold, wet, sunless autumn. All the fire heat that could be given did not make up for the rays of the sun. Our late house was quite ripe by the beginning of September, and I have scarcely lost a berry; and they are as fresh and plump now (the middle of January) as need be. All those sorts that have been subjected to a high temperature are also high in quality,

even Muscats, Frontignans, &c.; and what can be worse than green Muscats? How often do we see at exhibitions early in the season Muscats quite green, which have, perhaps, been grown along with Hamburgs for this special object, but which, if the framers of many of the schedules of flower shows were to adhere to their rules, would be discarded as unfit for exhibition, far less competition? And rightly so! Even the Hamburg is not so high in flavour when grown in what is termed a cool house. What has more particularly led me to call attention to this is, that I have a Barbarossa and Trebbiano in a Muscat house, which is generally started about the middle of February, and ripens in August. The Muscats have that fine amber colour which invariably proves that high flavour is not wanting. Trebbiano was this last season even higher-coloured than usual, and the flavour much appreciated by some. This variety we cut earlier than Barbarossa. The latter was allowed to hang until December, although, as far as ripening is concerned, it could have been cut in September. When sent to table, there being a large party, one of the gentlemen, being a great connoisseur of Grapes, could not make out what Grape it was. When told the

treatment it had received, his answer was, "From the quality and flavour of the fruit, I can uphold every word you say." Having sent a few to the editor of the "Gardener" from the same Vine, his verdict was the same. If Lady Downe's, Alicante, Seaciffe Black, Madresfield Court, and Mrs. Pince were all, say, started in March, and treated with a Muscat-house temperature all through the season, I feel perfectly satisfied that the flavour would be higher; also there would not be the so common complaints against their thick skins. Mrs. Pince, treated thus, will rise higher in estimation than it stands at present, for it has then a decided smack of the Muscat, but not when newly ripened. Then there is Raisin de Calabre, often seen in late houses similar to the green Muscats spoken of. This I have at present as fine in colour as the finest finished Muscat, and at this season it is most useful when a quantity of dishes are required.

There is another point that I think well worthy of consideration—namely, allowing the fruit to hang so long on the Vines. I believe it to be as injurious to them, if not more so, as early forcing; for a large crop hanging up to the month of February and March must, to a certain extent, always be drawing nourishment at a time when everything should be dormant.

The above simple statements I do not propound as new, but having proved them by the superior quality of the fruit grown, I am so convinced of the good results of this mode of treatment

HIGHER TEMPERATURE FOR LATE GRAPES.

I WOULD recommend the growing all late Grapes in a higher temperature than they are generally grown in, and also that they should be started earlier than is usual, so that they may get the benefit of the sun before its power begins to wane in autumn, so as to bring up all the properties which constitute high flavour, and which is not to be effected without plenty of bright sun. And now that it is proved beyond a doubt that Grapes cut and bottled will keep for a long time without any detriment to the flavour, they can all be cut by the second week in January, the Vines pruned, and got ready to start by the first week in March, so that the ripening process may be completed before the end of August, when the sun has still great power; and, in my opinion, the last two months'

that I shall follow it up more closely in the coming season. A late house of Barbarossa and Gros Colman, grown and treated in this way, will be little inferior to a house of Ham-burghs. I have little hesitation in saying that they would be

better than the latter at the time they are required, which would be after New Year's-day. I also feel convinced that there are varieties of Barbarossa, and one of them more free in fruiting than the other.—A. HENDERSON (in *The Gardener*).

THE "AMERICAN BLIGHT" BIRD.

ABOUT this little mischievous bird, probably the more literally I adhere to truth the more extraordinary will be found the particulars I shall communicate. I will commence about it by using the plural instead of the singular. They seem to have no fear. Their familiarity is extraordinary. Probably one reason may be they never hear the noise of powder and shot in my garden. Their little manœuvres at any time would cheat the lawyers here. From watching them occasionally, I have discovered that they have a very great aversion to our New Zealand hawk—will hide themselves in my bushes directly they can see his shadow in the air with their quick, penetrating, sharp, silver little eyes. They think my garden

bushes are their freehold; they make themselves so happy—in the shape of domestic happiness I mean; for, turn my head which way I may, nest after nest is to be seen in the bushes on each side of my garden walks at their breeding time. There does not seem to be much wildness in their nature; and I have no doubt the two hundred live birds shipped in the "Charlotte Gladstone" in May last for England have arrived safe and in good health, for I can assure you they are not very particular as to diet. They will not require much taming on their arrival.

About their variety of food I shall say something presently. I hope your readers will bear with me, and read patiently what



Zosterops lateralis.

I have to state about their destructiveness in a garden, noted from my own personal observation.

First of all I send you a drawing—pretty correct to nature, I fancy, for an amateur bird-fancier like myself—and likewise a dead skin all ready for "setting-up," if you are acquainted with a taxidermist; and lastly a tiny little nest. You will see the nest is of a somewhat semi-hemispherical form, resembling a little basket, with no lining in the interior. This curious habitation, you will see, is constructed chiefly of long hair and fine roots. It is impossible to watch the progress of the construction, and listen to their warbling as well, without admiring the perseverance with which they bring together the materials that are destined for the building and the art with which they are arranged.

Mr. Walter Buller, our New Zealand government ornithologist, writes thus—"This bird is invaluable to the orchards and gardens, where it subsists almost entirely [mark ye!] on the destructive little aphids known as American blight." This quoted statement is quite a mistake. Giving you my experience of them, they will not eat aphides of any kind if any other kind of food can be obtained. If they do eat any blight, they pick just a very little off our trees in the depth of winter.

Now I will state my experience of their destructiveness in my garden. As summer comes round and my early Cherries begin to colour, they commence wholesale havoc amongst them, and fly from tree to tree, their doing which we witness with anything but pleasure, I can assure you. They can eat

nice ripe Green Gages, Apricots too, and scoop out the inside of a ripe Jargonelle Pear very clean, leaving the skeleton hanging on the tree. They are fond of orchard fruits. Nothing comes amiss. They seem to have become permanent residents on the plains of Canterbury, and our fruit gardens are their greatest attraction. They are the best hands I know at picking a Cherry and Plum stone clean, and disfiguring a handsome rosy-cheeked Peach. They rank as one of our commonest birds, and are most decidedly increasing in number annually, while our other little insect-devouring native birds are decreasing in number from some cause.

Again about Mr. Walter Buller. He thinks and writes that "they are justly entitled to an occasional feed of Cherries or to a small tithe of the ripe fruits, which they have done so much to defend and cherish." Confound them! say I. They build their little tiny nests sometimes in my Elderberry bushes, Rhododendrons, Evergreen Buckthorns, prickly double-flowering Thorns, &c., which are generally pretty near the edge of a walk. If anything in the shape of grease happens to be outside of our house, they are sure to pick it all up quite clean. From Mr. Buller's opinion I beg to differ. As an extensive grower of fruit for sale I think it too bad, when our crops are just in and ready for market, that we should have them destroyed by swarms of some hundreds of this little pest. However, let it be as it may, in a financial point of view I am pounds sterling out of pocket through their depredations annually. There can be only one opinion as to their destructive habits. I am quite certain of one thing—we shall be obliged

before long to keep them in check by a wholesale system of slaughter, because they breed so numerously.

The New Zealand Maories have various names for this bird. "Tau-hau," a stranger; "Kaheni," snow-white eye, which may be interpreted spectacle eye or ring eye; "Poporhe;" "Tringatau," accidental or periodical appearance. We Europeans familiarly call it "Silver eye," on account of a white ring around each eye.

I omitted, when enumerating their diet, to state that they feed their young upon Asparagus berries for one thing, I having found skinless seeds in their empty nests. I may add they are very fond of ripe Figs on the tree: they serve them the same as ripe Pears. Elderberry trees, Currant and Gooseberry bushes, they clean all the trees clear of fruit late in the season, and I may also add they are very fond of my Passe Colmar Pears while hanging late on the trees in autumn to ripen. From Holly berries and Cotoneaster berries they strip the flesh and cast the seeds on the ground. They have already commenced a raid upon my Black Heart Cherries. The Cherries at the present date (November 21, 1872), only being partly coloured on one side; yet they won't let them alone.

A correspondent of a Thames paper writes—"I see that the small so-called blight bird is a mystery as to where it came from and when. Allow me to settle the date of their *debut* in New Zealand. They alighted on a mountain twenty miles south of Mount Cook in 1866, on the 9th of May. I was on the mountain when they alighted on the snow at an elevation of 7000 to 8000 feet above the sea level. The poor little birds appeared to be driven before the wind rather than come by any power of their own. They appeared to fall in millions, there were so many of them; and so helpless were they that a person could shovel them up in cartloads. I examined a few of the dead ones, and could not find a particle of food in any of them. The wind was blowing from the south and by west, from which point they came—no doubt from some undiscovered island south of the Auckland Islands. One year after seeing them in the South Island, I was surprised to find them as far north as Raglan."—WILLIAM SWALE, *Avonside Botanic Garden, Christchurch, Canterbury, N.Z.*

[This bird is named *Zosterops lateralis* by Gray, and *Z. tenuirostris* by Gould in his "Handbook of the Birds of Australia." He gave the specific name because this bird's bill is longer than that of the other members of the genus. Its native country, he states, is Norfolk Island. We have a specimen of the bird sent to us by Mr. Swale, and it quite agrees with this description given by Mr. Gould—"Head, all the upper surface and wing-coverts olive green, brightest on the head and upper tail-coverts; wings and tail brown, margined with olive green; throat yellow, stained with red in the centre; centre of the abdomen and under tail-coverts pale yellow; flanks olive-brown; bill and legs light brown, inclining to lead colour; eye surrounded by a narrow zone of white feathers, bounded below by a line of blackish brown. Total length, $5\frac{3}{4}$ inches; bill, $\frac{1}{2}$; wing, $2\frac{3}{4}$; tail, $2\frac{1}{4}$; tarsi, $\frac{1}{2}$." Mr. Swale sent with the specimen of the bird one also of its nest, a perfect hollow semi-globe of horsehair, and realising this note of Mr. Gould's—"Among the many pleasing recollections connected with my explorations in Australia, none are more grateful than those pertaining to this little group of birds, whose pretty cup-shaped nests and spotless blue eggs remind one of those of our own Hedge Accentor."—Eds.]

BELGIAN HORTICULTURE.—No. 2.

M. LINDEN'S, BRUSSELS AND GHENT.

FROM Antwerp to Brussels *via* Malines is less than an hour and half by ordinary train. The country through which the line passes is in general appearance not unlike our own. It is well wooded and abundantly watered. The main differences are that the allotments or fields are much smaller than ours, and the trees, instead of being free and irregular as with us, are planted in straight lines, and have apparently been set out with mathematical accuracy. Whatever may be said of the stern utility of the Belgians, they have clearly an eye to ornament, as is evident by the fantastic treatment of shrubs and hedges, and the grotesque architecture of summer-houses and garden buildings which one sees in passing. The land is mostly under roots and vegetables, which are consumed in infinitely greater quantities than in England; partly accountable by the variation of national taste, but more so, I cannot help thinking, by the inability of the masses to procure an

adequate supply of animal food by their extremely limited incomes. In this surmise I was borne out by the experience of a large employer of labour, who informed me that 2*d.* per hour was the current rate of wages for ordinary workmen, and the price of animal food quite as dear as in England. Under these conditions, he asked, "How can they live like you in England?" Thousands, however, of inferior workmen, I was told, did not receive more than 1*d.* per hour. But mind, they do not work like Englishmen; they could not if they would, their spare weakly frames and diminutive stature being conclusive evidence on this point.

But I am at Brussels, and must leave work and wages for pleasure and sight-seeing. This is a magnificent city, and my impression was that we have nothing at all comparable to it at home. The fine sweeping *heulevards* arrest attention at once. In some places they cannot be less than 60 to 80 yards wide, and contain eight rows of trees—Planes, Chestnuts, and Hornbeams, all in luxuriant health, and as clean as if growing a hundred miles from the haunts of man. This cleanliness is remarkable. All the buildings—and certainly there are many magnificent ones—look as if painted yesterday of a uniform very light stone colour. This pleasing freshness could only be preserved by a total absence of smoke. There is no smoke nuisance here, every particle of the Belgian coal being consumable. Trees, shrubs, and flowers flourish in the very midst of the city. The park opposite the Palais Royal might be likened to an oasis in the desert. The trees are of perfect growth, and the verdant canopy of foliage affords refreshing shade to the teeming thousands who daily and hourly ramble round its umbrageous walks. It is just what a city park should be—every part free, and every part shady, and so disposed that nothing can be injured without considerable trouble on the part of the depredators, because it contains no fragile forms of vegetation. It is not a hybrid between a wood and flower garden, but is a park pure and simple, and capable of affording the greatest enjoyment at the greatest ease to the greatest number—prime conditions in my opinion to the success of a people's park.

As to flowers Brussels is singularly destitute. The prevailing taste for beauty centres in form and habit more than in mere colour. I saw just one bed of Geraniums and one line of *Calceolarias* in the whole country. Petunias are more plentiful, but on the whole flowers are very sparsely used in garden decoration. Aloes, Yuccas, Cannas, and subtropical plants of fine foliage and habit are the staple subjects of garden ornamentation, with trim specimens in tubs of Oleander, Bay, &c., for terrace work, with Palms *ad lib.* Belgium is a land of Palms. I have no doubt I saw in three establishments a greater number of plants of this family than there are inhabitants in the whole nation.

After a look round this splendid city, by sundry signs and motions (for we meet with few who understand English), I found and gained entrance to the celebrated horticultural establishment of M. Linden, a name familiar to the whole world of gardening by the many valuable introductions attaching to his indefatigable zeal and enterprise. This nursery is in the Quartier Léopold, and adjoins the Zoological Gardens. "*Multum in parvo*" ought to be written over the gates, for if there is a place in the world where, in the matter of plants, much is contained in little, it is here. Externally there is not a semblance of show or display, but internally there is a host of Orchids and new and rare plants of almost every species, bewildering by their numbers and variety. In Orchids alone M. Linden offers nearly 20,000 plants in 1200 species. It is almost beyond belief that a place so small and unpretending should be the seat of so much that is rich and rare in horticulture. Here is to be seen perhaps the largest and most complete collection of Orchids in the world, and certainly the most extensive variety of officinal and medicinal plants to be found in any trade collection. The small enclosure is filled with low span-roofed houses standing parallel to each other, the only appearance of ornament being a row of gigantic standard Rhododendrons in tubs at the end of each house. The structures are matter-of-fact useful erections, with brick sides and sunken pathways, calculated to keep an equable temperature at a minimum outlay in fuel. Here on a centre stage or bed, with a tank under it, and a narrow stage at the outside, are arranged the plants, the path running round. House after house is packed with plants, from thousands in small pots to fine specimens of Orchids of greater age and value, all perfectly clean and grown at the lowest temperature consistent with health. The Indian house, with its magnificent

Vandas and other kindred subjects, extorts admiration by its extensive and well-conditioned occupants, and the official collection is unfailingly interesting by the health and perfect cleanliness prevailing it throughout. Besides the above unrivalled collections, new and rare plants of almost every genus are located here; many of them are not yet in commerce. Amongst the most striking were the beautiful *Philotenum Lindenii*, *Dieffenbachias latimaculata*, *imperialis*, and others in immense numbers. There is a vast congregation of *Marantas*, including all the new forms of this varied family. At this establishment are kept all the newest and rarest varieties of Palms, and anything more elegant than these it is hardly possible to conceive. *Ptychosperma atlantica*, *Acanthorhiza Warszewiczii*, and the different kinds of *Kentias* are amongst the most attractive.

I will not, however, attempt to string together a mere list of names, which can serve little practical purpose, but leave them for the better delineation of "EXPERITO CREDE," who possesses the judgment for picking out the best, and the tact of hitting them off in the best manner. I have also another reason for not naming many things good and grand which came under my observation, and which I will tell another day. But, after all, the main feature of this place is the Orchids. For many years M. Linden has laboured to make this class of plants popular amongst ordinary lovers of flowers, and has exerted himself to dispel the notion that some mystery attaches to their cultivation, and to dissipate the idea of the "frightful expense" which has somehow got coupled with their name. This object should be fostered by all; for as to cost, many do not exceed the price of a tricolor *Pelargonium*, which is here to-day and gone to-morrow and require but little more heat to grow and skill to cultivate successfully either. Many of the *Cypripediums*, *Odontoglossums*, &c., require but little artificial heat, and how striking and lasting are their beauties! There are, in fact, no real difficulties in Orchid-growing which an intelligent gardener may not easily overcome by giving the necessary study to the geography and climatal influences and variations of their native habitats, and acting according to their dictates which the study will certainly provoke. I must postpone some impressions, intended for this letter, of M. Linden's larger establishment at Ghent. I therefore close abruptly, and conclude as I began, that this little great place at Brussels should have "*Mutum in parvo*" written on its gates.—J. WRIGHT.

RAINFALL AND OTHER METEOROLOGY OF 1872.

LINTON PARK, NEAR MAIDSTONE.

	Rain in inches.	No. wet days.	No. frosty days.
January	4.68	26	10
February	1.33	18	5
March	1.93	15	11
April	1.59	15	4
May	4.35	18	4
June	4.13	17	—
July	2.21	15	—
August	1.55	12	—
September	2.01	9	3
October	4.48	22	6
November	5.81	23	4
December	5.26	25	5
Total for 1872	39.10	215	52
Total for 1871	25.12	167	83
Average of preceding 16 years, 1855 to 1870	26.54	163	84

The wettest year prior to 1872 was 1865, when the rainfall amounted to 35.18 inches; in 1860 it was 33.66; and in 1858 only 16.33 inches. The number of frosty days during the past season has also been fewer than in any year I have on record. In 1868 there were sixty-two frosty days, while in 1854 122 were recorded. In summing-up, the features of 1872 are in a few words excess of rain and a scarcity of frosts; yet, owing to the very late and severe spring frosts and the early autumn ones, there was a shorter period without these visitations than in any former season I have on record.

January was mild but very wet. Rain fell on twenty-six days, with the thermometer down to 23° on the 10th, being the lowest point registered during 1872. February was mild also, but not wet, although often dull. March was likewise mild up to the middle of the month, afterwards wet and sometimes wintry. April presented greater extremes than usual, but ended with vegetation being more forward than com-

mon at that season. May was the most disastrous month in the year. Frosts on the 6th, 11th, 12th, and 20th, completely destroyed the prospects of the fruit in all but a few cases, the frost on the morning of the 12th being especially severe; it was also a wet month. June followed suit in its dull and cheerless character, with a few fine days towards the end, and an unusual amount of thunder in that and the following month. July—which, however, presented a greater number of fine days, and some hot ones towards the end—tended to correct the tardiness of vegetation during the two preceding months. August on the whole was fine, and so was September, the rainfall here being certainly not so heavy as at many places; but, contrary to all precedent, we had frosts here on the 21st, 22nd, and 23rd sufficiently severe to destroy most tender plants in the flower garden, and leading many to suppose that a sharp winter was in store for us. The month, however, ended fine, and wet weather did not fairly set in till the middle of October, and from that time to the end of the year a continuance of rain was the order of the day, varied a little now and then by high winds and a few slight frosts; but these have been so few, that from the 13th of December up to the time I write (January 17th), we have not had the vestige of one, 35° being the lowest point recorded during that period, an unusual occurrence on thirty-five consecutive days in December and January. The season has not been without its advantages, and we shall probably remember these when we have one of a different kind.—J. ROBSON.

OSMINGTON, WEYMOUTH, DORSET.

HEIGHT of top of gauge above ground 1 foot; above sea level 250 feet.

	Inches.		Inches
January	6.53	August	1.61
February	2.87	September	1.66
March	3.29	October	7.71
April	2.51	November	5.66
May	2.52	December	5.70
June	4.07		
July	3.81	Total	47.53

Average for six years inclusive, 35.16. Rainy days, 169.—C. T. HALL.

CARLESGILL NEAR LANGHOLM, DUMFRIES (370 feet above sea.)

The rainfall for 1872 amounts to 69.80 inches. In January alone 10.20 inches fell, and in November 8 inches. The amount is 12.34 inches above the average of thirty years. The fall in 1872, however, was not so great as in 1868, which gave a total of 70.09 inches.

HIGHGATE NURSERIES.

HEIGHT of top of gauge above ground 1 foot; above sea level 366 feet.

	Inches.		Inches.
January	3.73	August	1.71
February	1.07	September	1.52
March	2.66	October	5.61
April	1.62	November	3.53
May	3.18	December	4.49
June	2.47		
July	2.24	Total	33.86

We have registered rainfall here for ten years, and find that 1872 was about 10 inches above the average.—J. CUTBUSH.

SANDFIELD PARK, NEAR LIVERPOOL.

HEIGHT above sea level 147 feet.

	Total depth. Inches.	The number of days on which rain or snow fell.
January	4.50	19
February	2.70	19
March	2.81	22
April	2.75	15
May	1.50	18
June	6.20	21
July	7.00	14
August	2.90	21
September	6.50	23
October	6.12	19
November	2.94	20
December	4.36	18
Totals	49.57	229

Average of eight previous years, 28.17 inches.—WILLIAM BIGGS, Gardener.

BRANSTON.

The following figures show the amount of rain (lat. 53° N., lon. 0° 34' W., 130 feet above level of sea), which fell at Branston during the year 1872:—

Inches.	Inches.
January	2.50
February	2.77
March	1.75
April	3.27
May	1.16
June	3.21
July	4.67
August	2.76
September	2.83
October	3.75
November	3.39
December	3.31
Total	35.40

Total fall, and wet days in previous years.

1871 23.33	148	1869 28.78	162
1870 23.05	147	1858 20.68	115

Hottest day of year July 26th, 91° in shade; coldest night January 10th, 23°.

CARGEN, KIRKCUDBRIGHTSHIRE, 80 feet above sea level.

Inches.	Inches.
January	10.02
February	6.76
March	3.96
April	1.13
May	3.51
June	5.91
July	4.31
August	3.27
September	5.62
October	5.12
November	5.50
December	5.56
Total	63.50

Mean rainfall of last twelve years, 41.10 inches.

IRELAND.

1871.	1872.	1871.	1872.
Ins.	Ins.	Ins.	Ins.
Autrim (Aghadee) ..	30.18 .. 47.09	Cork (Fermoy)	35.56 .. 46.66
Carlow (Brown's Hill)	33.10 .. 47.29	Dublin (Balbriggan)	31.51 .. 43.36
Clonmel (Glenarm) ..	46.78 .. 59.18		

[The above, and many other records of the rainfall in various parts of the British Islands, demonstrate that in 1872 it was greatly in excess, in some cases double, that of the average of previous years; but there is one portion of Cumberland where the rainfall is annually so large as scarcely to admit of increase. Mr. Isaac Fletcher, M.P. for Cockermouth, who has for several years kept rain gauges at various stations among the Cumberland mountains, has published in the *Carlisle Journal* the records of each month during the year 1872. His gauge at Seathwaite, at the head of Borrowdale, has been established for nearly thirty years, and the returns of the past year show that in the heart of the lake district the rainfall of 1872 has not been exceeded in any year during that period.]

Seathwaite is 422 feet above the level of the sea; in 1872 the amount of rain there was 186.25 inches, and the number of wet days 228. At the Sty, 1077 feet above the sea's level, 224.73 inches fell, and Mr. Fletcher justly remarks:—"The amount registered on the Sty—nearly 25 inches—is marvellous, and is in excess of any previous record. In 1866, 224.56 inches were recorded. So far as has yet been ascertained the Sty is the wettest spot in Europe, and, except in tropical countries, the quantities I have quoted represent the two greatest annual falls of rain that have ever been recorded. The fall in January, 1872, is, however, more wonderful still—viz., 50.05 inches, about double the average annual fall in Carlisle. January, 1873, bids fair to rival its predecessor."

We think the returns we have already published are sufficient to demonstrate the extraordinary amount of rainfall in the past year; and as its local distribution will be carefully tabulated by Mr. Symons, our space in the meanwhile will be more profitably occupied with other subjects.—Ems.]

NOTES AND GLEANINGS.

The reply to the NATIONAL HERBARIUM MEMORIAL to Mr. Gladstone, signed by so many eminent botanists, is as follows:—

"Treasury Chambers, January 23rd, 1873.

"SIR,—The Lords Commissioners of Her Majesty's Treasury have had before them your letter of the 3rd inst., and the Memorial enclosed in it from various gentlemen engaged in the pursuit of botany or in instruction therein, with respect to the transfer, to the branch of the British Museum about to be constructed at South Kensington, of the scientific collections and library now existing at the Royal Gardens at Kew.

"Their lordships desire me to request that you will inform the memorialists that Her Majesty's Government have not formed the intention of removing the collection to South Kensington, and that should anything lead them hereafter to entertain the idea, they will take care that ample notice shall be

given, and that the judgment of the persons most accomplished in botany shall be fairly weighed in the first instance.

"I am, Sir, your obedient servant,

"WILLIAM LAW.

"The Rev. M. J. Berkeley, Sibbertoft,
"Market Harborough."

— MESSRS. SUTTON & SONS have recently very much enlarged and beautified their premises at Reading. A full description, and an engraving showing the frontage in the Market Place, are in the *Builder*, published on the 25th of January.

— MANY readers will be surprised to learn the extent to which the SMILAX is cultivated in North America. There are in New York and Boston probably twenty greenhouses, having an area of 20,000 feet, used exclusively for the growing of Smilax. Besides this, thousands are grown as window plants by private individuals. No plant is better fitted for house culture, as it grows in any temperature, from 50° to 75°, and does well in comparative shade. It took three years for the New York florists to find out that their contemporaries in Boston were far ahead of them in the cultivation of Smilax and Rose buds; and even to-day, Boston Rose buds bring ten per cent. more in New York than home-grown, for no other reason than that they come from Boston. It is probable that 40,000 dols. have been expended the past season in the vicinity of New York, in erecting greenhouses for the growing of these two articles alone.—(*American Horticulturist*.)

— We understand that the business of hot-water engineers hitherto carried on by Mr. T. S. TRUSS, Friar Street, S.E., has been converted into a company called "The Patent Pipe and Boiler Foundry Company (Limited)."

— ONE of the prettiest winter-flowering shrubs is ERICA CODONODES, a species very rarely to be met with. We have it now in full bloom growing in the open air of the Weald of Sussex, where it is perfectly hardy. We procured it from Mr. W. Knight, of Hailsham, in whose nursery we have observed a good stock of it.

WORK FOR THE WEEK.

KITCHEN GARDEN.

In all situations, and under all circumstances, it is highly commendable to keep a cropping table and note the time of sowing, planting, and gathering, with remarks on each description of vegetable. This table would be of great value in pointing out the time of sowing in that particular locality, so as to have the crops come in at the time required. A sowing of Marshall's Prolific or Early Mazagan Beans should now be made in the open ground where the soil is sufficiently dry to work well. *Cauliflowers* in frames and under hand-lights should be divested of decayed leaves and litter; give them abundance of air in mild weather. Sow Seymour's Superb White Celery in boxes for the main early crop. This is a superior variety, it grows large and is not so liable to run as other sorts. This is a good time to prepare for the principal crops of Cucumbers. In making dung beds some brushwood or faggots should be laid at the bottom to drain off superfluous water. A narrow layer of the same material should also be built up with the bed under each rafter, to reach from front to back; this will allow the heat from the linings to circulate freely, and at the same time will be a saving of dung. As soon as the seed leaves of the young plants are fully developed pot off, using the soil before recommended. Remove decayed leaves and rubbish from Lettuces in frames. Give plenty of air. As soon as the young plants in boxes are an inch or two high prick them out on a warm border next month, when they will be found to be nearly as early as the autumn-sown plants. After the beds for Mushrooms have been made a few days, the heat of them should be examined every morning, so that it may be ascertained if the temperature is increasing or decreasing. A thermometer may be thrust a few inches beneath the surface of the bed, and if after two or three examinations it does not exceed 90°, the bed may be spawned. A sowing of Early Frame Radishes may be made on a sheltered warm border. Remove the covering from that portion of Sea-kale which was forced early; cut the stem short, so as to keep them within the compass of a pot or box. Shallots and Garlic should now be planted if not done in the autumn.

FRUIT GARDEN.

If any transplanting of fruit trees has yet to be done this season, it should be seen to at once; also see to getting ground intended to be planted with young trees prepared, and spare no pains or expense to have this properly done. Make sure of thorough drainage, and when the subsoil is unkind this should be removed, replacing it with some good fresh loam. Pruning and nailing should be persevered in whenever the weather is favourable. Any tree intended to be grafted in spring may be headed-down, but leave the branches sufficiently long to allow

an inch or two more to be taken off at the time of grafting, when a clean cut should be made.

FLOWER GARDEN.

The directions of last week may be attended to in the shrubberies; and in the flower garden Roses may be pruned, and deciduous climbers regulated and tied or nailed properly. I am not an advocate for close pruning in spring, but prefer cutting out the old wood and replacing it by young shoots every season. Should frost continue, it will leave the florist little to do out of doors. Tulips ought to be out of harm's way. Pinks, if defended in the manner recommended in a previous calendar, may bid defiance to hares and rabbits. Ranunculus beds will be all the better of frost. The final arrangement of the roots for planting may now be made, keeping all flat-crowned ones for the side bed. Auriculas, though necessarily covered, as the trusses are rising in the hearts, ought to have air whenever practicable, withdrawing or tilting the frame lights in the middle of the day, if only for half an hour. Carnations in frames may have a current of air passing under them during the frost, the frames being closed at top to prevent the ingress of snow or rain. The florist may employ his leisure time in manufacturing and repairing Dahlia shades, making small three-cornered paper bags for Tulips and Ranunculus roots next season, painting or otherwise marking zinc labels for Dahlias and Roses, and attaching metallic wire to them.

GREENHOUSE AND CONSERVATORY.

As the season advances give more air to the houses. See that suitable composts are ready under cover for potting and sowing seeds. Some of the hard-wooded plants may now be propagated by cuttings, where a gentle bottom heat can be kept up. Do not increase the temperature of the houses yet, and take care that all the plants are clean and free from insects. The early-forced bulbs will now be out of bloom in the conservatory, and should be removed to some sheltered place whence frost is excluded in order to ripen their foliage, and other plants may be introduced from the forcing houses. Hibiscus, Clerodendrons, Juscias, and other half-stove plants which flower in the conservatory may be pruned, and some of them placed in a higher temperature, but they should not be potted until they begin to grow freely. A few Neriums and Hydrangeas may be also forced into early growth for this house. A gentle heat would now benefit the Chinese Azaleas for early flowering. Continue to give as much air to the greenhouse daily as the state of the weather will admit of, and see that all the plants are watered regularly: the great object is to keep these plants from growing early.

FORCING PIT.

Continue to introduce fresh supplies of plants as the former ones are removed to the conservatory, also other plants from which you wish to obtain an early crop of cuttings, such as *Salvia splendens* to come in early in the autumn. Common plants that do not promise much bloom should be at once discarded to make room for others; failures of this nature always occur more or less in early forcing.

PITS AND FRAMES.

Here, if the number of plants required for bedding-out is considerable, there will be plenty of employment for all hands. The whole of the autumn-propagated plants must be potted-off without delay, so as to get them well rooted and turned out into temporary pits by the 1st of April, so as to set the pots at liberty for a second lot of plants, which should now be coming forward in the propagating frame. It is of no use to plant *Verbenas*, &c., for beds at a foot or more apart, as late experience proves that, unless we plant out good masses at once, the flower garden will present only empty borders until August or September; therefore, where we wanted one plant in past years we shall in future require three or four, and consequently a corresponding provision must be made. *Hydrangeas* introduced into the forcing house in January will now require to have their side shoots removed to give strength to the leader. These shoots must be used for propagating, to provide plants for another season. Sweet Peas, if wanted to bloom early, must be sown in pots in heat for transplanting; indeed, a general assortment of the best annuals must now be sown in pots for the spring and early summer decoration of the flower garden. Some of the Stocks and other annuals sown some weeks past will require potting-off, putting three or four plants in a pot. Divide and make root-cuttings of *Bouvardia triphylla* and *angustifolia*, and get the plants forward and strong for planting-out. Dahlias of choice sorts from which many young plants are required may now be potted and placed in heat, or they may be laid on the tan in a forcing house, and covered with leaf mould or rotten tan.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The frost that has come after the continuous rains has prevented much fine work being done, but there has been a good

opportunity for wheeling over walks without injuring them. We have been moving and turning soil, ridging, trenching, and rough-digging, and getting materials ready for slight hotbeds for Carrots, Radishes, Potatoes, Turnips, &c., and for sowing early Cauliflowers, Cabbages, and Lettuces. In old gardens, in preparing for all such forwarding hotbeds, two things can generally be accomplished at one time. Thus, in wheeling-out rotted manure to quarters, beds, and borders, a good deal will be obtained from the centre and bottom not nearly so much decayed as that at the sides and tops of the beds, because less exposed to moisture and air. The longest of that might be joined to the general fermenting heap, and the slightly-more-decomposed be used as a topping to keep down the steam from the fresher, and, in some cases, not too sweet material when first used. It costs but little trouble to cast the longest, least-thoroughly-decomposed to one side, and make it serve a further heating purpose.

Owing to the wet dull weather, forward crops under glass, with all the air possible, have not grown so sturdily as usual, not from having too much heat beneath them, but from not having enough of sun and a drier air around them.

There need be no want of Asparagus, Sea-kale, or Rhubarb where a mild heat of from 50° to 55°, and even, when much wanted, up to 60°, can be given, and there are plenty of plants to lift and remove. The great loss in the case of Asparagus is, that it is hardly worth while to do more with the old roots than consign them to the rubbish heap. When we have replanted the best of them they rarely succeeded so well as young plants. The others mentioned, when hardened-off before replanting, did generally very well afterwards.

FRUIT DEPARTMENT.

The press of other work which could be done even in such weather, has kept us back here as respects out-door work with fruit trees and shrubs in the way of pruning, tying, nailing, cleaning, &c.; and the sunless weather demanded that all forcing operations should be conducted more slowly than usual, in order that forward blooms should not suffer, nor young shoots be drawn up more thin and watery than usual. The admission of more air than is customary, especially if the air is somewhat heated before reaching the plants and flowers, will do something to correct this disagreeable tendency; but even that will not compensate for the want of the sun's rays. We recollect some years ago having much trouble to get a moderate crop of Peaches in a house. Though the trees were well supplied with bloom—notwithstanding touching with feathers, camel-hair brushes, and waving with flat boards in the way of a fan over the blooms, there seemed little reciprocal influence between the parts of fructification, and that chiefly, in our opinion, because there was only one hour and a half of sun altogether whilst the trees were in bloom, and that time was made-up of times when there was only a gleam for a few moments, many gleams not lasting a minute before the clouds covered the sky. In all such cases comparative dryness of the enclosed air is important—not too dry, for that would shrivel up the anthers; but, on the other hand, not too moist, or in dull weather they will get clogged-up and refuse to open, and the waxy-surfaced pistils become equally inoperative. Even out of doors an excess of moisture at the blooming time often does more harm than a dry frost of several degrees below the freezing point. Hence, in all such weather a lower temperature and a drier atmosphere under glass will be more desirable than the reverse. Swilling stages, shelves, and floors in such weather demands a greater consumption of fuel—a greater rise of vapour—to give additional moisture to the atmosphere, a part, at least, of which will be condensed against the glass, and, if no means be used to the contrary, it will fall like dewdrops over the house, and often thus injure the plants beneath, besides tempting them to a languid weakly growth.

We recollect of a case early in winter, where it was insisted that a Peach house, with trees on a flat trellis in front full in bloom in December, was kept up to 60° or 65° in frosty weather, and the moisture being used in proportion, the droppings from the condensed vapour on the glass fell like a shower on the blooms; and, to prevent that, calico was stretched along to receive it at least in the first place, and, well stretched, this kept it so far from falling on the blooms. We would now say that under such circumstances it would be better in every way to let the thermometer in the house sink 10° at least, and take the chance of a natural stimulus in a gradual but safe rise from sunshine.

As a general rule, especially among beginners, who like to see plants looking at their best when they would really well pay back for a little rest or repose, fruit houses and plant houses are apt to be kept too hot and too moist in dull cold weather in winter. As an example in the one case, we can recollect using a long-pointed instrument affixed to something like a syringe, with which to draw up the water from the hearts of Pine plants after the young fruit had shown itself, so that the fruit should not come deformed; and in the other case, as respects plant houses, we have seen scores of fine blooms of Camellias, &c., spotted and rendered useless for decorative purposes by the

drops falling on them from the roof, especially if the roof was not perfectly clean, or, if iron, was not thoroughly free from rust and blemishes. True, much of this might be avoided by fluted sashbars; but though well aware of their importance in taking condensed moisture out of the house, too many gardeners are only too glad to get sashbars of any kind. These fluted sashbars are especially useful in flat-roofed houses where a high temperature is maintained in winter.

A great deal may be done to counteract this evil, and yet remain inside the point of safety, by simply keeping the houses a little cooler and drier. As less vapour will rise there will be all the less to be condensed, and consequently fewer and smaller drops to fall.

ORNAMENTAL DEPARTMENT.

Turfing in Winter.—Rough as the weather was, yet there were fine sunny days in which turfing as well as levelling could be done, though it will ever be found a future source of trouble to do much particular levelling with soil at all frozen in lumps, as, though you may get a fine unfrozen surface, these lumps will sink unequally and present you with an uneven lawn afterwards. If such lumps, from a covering of grass, &c., can be avoided, levelling and also turfing may be done in such frosty weather as we have had, if these two conditions are attended to—that the soil should not be frozen, or be thawed, before the turf is put on; and secondly, that the turf itself, whatever time it may have been taken up, should be free from frost. Of course, the sooner turf is laid after being taken up the better, but it often happens that it must be in heaps some time before the ground can be made ready for it. In all such cases when frost is anticipated, it is worth the little trouble to cover the heaps with a sprinkling of litter. Very little will keep out the frosts such as we have yet had, and even in a frosty day it will come out limp and clean, and may be laid down and beaten at once; whilst, exposed in even such slight frosts, you might as well attempt to lay cylinders down flat. Besides, turf taken up and rolled in the usual way with the earth side outwards—(why always, we can hardly say)—suffers much from frost, as the roots of the grass are apt to be killed. When frost is anticipated, and heaps must be made and litter is scarce, it would be much better to pile the turf without rolling, and the earth side downwards. Very little litter round the sides would then be almost sufficient, as the top being grass would of itself be a great protection. Many years ago a good many yards of turf were left rolled-up in narrow rows, and thus exposed to three days of unexpected sharp frost, and though laid down in a week afterwards, and looking not so badly at first, it got worse as the days lengthened, and in May a lot of fine seeds had to be sown over it and heavily rolled-in, thus entailing extra labour and expense.

In this frosty weather extra care will have to be taken of early bulbs, &c., out of doors, protecting them with a cone of cocoanut fibre, dry ashes, &c. Pinks, Carnations, and Pansies out of doors will be benefited by open twigs of evergreens stuck in among them and removed as soon as the weather moderates, as then such shelter would be injurious. Twigs with small leaves answer best for this purpose, as, though the force of the frosty winds is broken and calmed, the plants are not weakened as they would be if covered over altogether. This is one of the evils apt to be produced by mats or other similar coverings, unless the weather is severe enough to arrest everything like an attempt at growth. Finer plants, as Auriculas, and potted plants of the best Carnations, Picotees, Cloves, and Pinks, can hardly be kept too dry. In the uncertain mild weather as respects rains and dribbles, plenty of air should be given front and back, but the sash tilted-up, not removed. In such frosty weather with no sun, provided the soil for the plants is dryish, scarcely any air will be wanted. If the sun do come out, elevate the lights at back, and keep the air on until after the departure of the sun, and the air gets cold inside, when the lights should be shut down, and in extreme cases a little covering given, but only in extreme cases.

Since our first young days in gardening, the last time we saw what seemed a good collection of Auriculas, we felt as if some one had given us such a knock at the heart as to stop for a time all circulation of blood and all thought. There the fine-looking plants stood in shallow frames, the 6 and 8-inch pots plunged in ashes that seemed more wet than dry, for three-parts the height of the pots; and in a clear frosty day at the end of December, with a bright sun and a thermometer at the north side of the wall standing at 23° below freezing point, the plants stood fully exposed to keep them hardy, though the soil in the pots seemed as hard as brick, and the rims of the pots were cracking and splintering in all directions. We heard afterwards that the plants bloomed badly. We should have preferred but little frost to visit them, and if in such sun the plants with air at back and a little at front had been unduly excited, we should have preferred to have given a little shade to mitigate the force of the sun, rather than such a full exposure to clear, dry parching, frosty air. Two things we are too apt to forget, but we make a present of them to all aspirants of progress. The

beautiful and interesting alpine plants will, ere long, be dear favourites with lovers of plants who have but little room. They must not, however, think alone of their hardness, their being natives of very elevated positions, or of high latitudes where the cold is often intense, for that is no reason why they will stand uninjured a similar amount of cold with us, any more than that they would survive the coddling we could give them in a warm plant house. The best and most effectual of all coverings, that of snow, covers them up in their natural habitats just when the cold is intense enough to arrest all growth. Such plants would suffer nothing from a long night of protected darkness in continued frosty weather, provided they were kept cold enough just to live and not to grow. Though different in their character, we have thus treated even Calceolarias and other half-hardy plants, shutting them up for days and weeks when there could be no benefit by exposing them in severe weather. The conditions of safety must, however, be present—that frost to no great extent should reach them, and yet the atmosphere round them should be so near the freezing point that there will be no elongation or growth.

Again, do not be led away by learned statements as to the cold and frost that plants will stand in Australasia, and even elevated tropical regions, and believe that such plants will withstand an equal degree of cold in our cloudy moist atmosphere. There, in many cases to which reference is made, the air is much drier and the sun seldom clouded, or, if so, at certain definite seasons, and the tendency is to give to the wood of such plants something of the hardness of heart of Oak—very different from the more spongy soft growth they make in our more dull and less sunny climate.

We completed much potting and cleaning, and the general treatment of houses and plants has been foreshadowed. We had hard work in putting to rights an old boiler that gave way just when we wanted it; and it furnished several reflections, to which we may allude, and the more particularly as among the first papers of these "Doings" we had to record a similar mishap at the coldest time but one of which we have any recollection. That was comparatively a young boiler. From what we can make out, this one must have worked fully forty-five years. We question if many of our new-fashioned boilers can ever boast such a longevity, and on the whole it seems sound now.—R. F.

TRADE CATALOGUES RECEIVED.

Edwin Cooling, 18, Irongate, and Mile-Ash, Duffield Road, Derby.—*Select Catalogue of Seeds.*

F. C. Heinemann, Erfurt.—*General Catalog der Samen und Pflanzen-handlung.*

William Rumsey, Joyning's Nursery, Waltham Cross, London, N.—*Select List of Garden, Flower, and Farm Seeds, &c.*

W. Samson & Co., and W. & T. Samson, Kilmarnock.—*General Catalogue of Seeds, Plants, &c.*

Stuart & Mein, Kelso.—*General Catalogue of Vegetable and Flower Seeds.*

Archibald Henderson, Sion Nursery, White Horse Road, and North End, Croydon.—*Catalogue of Garden, Agricultural, and Flower Seeds.*

Edmondson Brothers, 10, Dame Street, Dublin.—*Spring Catalogue of Vegetable and Flower Seeds, Roots, &c.*

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

BOOKS (J. E.).—Mr. Rivers's "Orchard House" is published by Messrs. Longman & Co., Paternoster Row. (A Florist).—We do not know the book you name.

DAHLIAS of 1872 (J. Oliver).—In "The Gardeners' Year-Book" are a list and description of them, and of all the new flowers. You can have the book free by post from our office if you enclose fourteen postage stamps with your address.

SITUATION (W. H.).—Write to Mr. Barron, Royal Horticultural Society's Garden, Chiswick; and to Mr. Smith, Curator, Royal Botanic Gardens, Kew, telling them what you wish.

SCARLET GERANIUM FOR BEDDING (H. T. H.).—As you require depth of colour and abundance of flowers, the best scarlet Geranium to answer your purpose will be Waltham Seedling or Bayard. See Mr. Peach's notes on Geraniums which appear this week.

SELECT CARNATIONS AND PICOTEEES (G. H. B.).—Carnations—Garibaldi, Eccentric Jack, Lady of the Lake, Mayor of Nottingham, Illuminator, and Rose of Stapleford. Picotees—Lord Valencia, Miss Turner, Admiration, Lady Elcho, Flower of the Day, and Miss Sewell. The "Cottage Gardeners' Dictionary," which you can have free by post from our office for 7s. 2d., furnishes the information you require.

Fig (G. S.).—You will find the Reculver in the "Fruit Manual" as a synonym of Black Provence.

ARNOTT'S STOVE (R. B. P.).—The stoves used by "J. W." (page 53), are 2 feet 9 inches high and 18 inches square. Three stoves are in use there: two in vinerias and one in his employer's entrance hall. They cost £4 each. He fears one of the size mentioned would not be sufficient to heat 5400 cubic feet of space; but this, in a great measure, depends on what is meant by "heating," and also the material surrounding the space. In a lean-to vinery facing the south, a stove placed in the centre and close to the back wall—the worst place in the house, so far as an equable diffusion of heat is concerned, but the only one convenient—the Vines are started in February, and Grapes cut about the 20th of July. This is what the stove will do, and all it will do, so placed. The house is 15 by 14 feet, 14 feet high at back, 6 in front, containing 2520 cubic feet of space. If the stove had a better position, and were only required to exclude frost, an additional 1000 feet would be safe in its keeping, and perhaps more. Much depends, however, on the style of house, its aspect, whether or not contiguous trees or buildings break the force of wintry blasts, &c. In another house of the same size as the above, a stove is used merely to exclude frost. It has never failed to answer its purpose, although placed at the back of the house and under the stage.

TWENTY-FOUR PILLAR ROSES (Amateur).—Charles Lefebvre, Alfred Colomb, John Hopper, Emile Hansburg, Countess of Oxford, Madame Victor Verdier, Senateur Vaisse, Marguerite de St. Amand, Mlle. Marie Raby, Duchesse de Morny, Madame Clemence Joigneux, Fisher Holmes, Madame Caillat, Victor Verdier, Boule de Neige, Baronne de Maynard, Mlle. Eugenie Verdier, Dupuy-Jamain, General Jacqueminot, Duchesse de Caylus, Maurice Bernardin, Jules Margottin, Duc de Cazes, Duke of Edinburgh. Climbers:—*Gloire de Dijon, Marechal Niel, Deveniensis (climbing), Celine Forestier, Triomphe de Rennes, *General Jacqueminot, *Felicite Perpetuelle, *Sir J. Paxton, Acidale, La Biche, Jaime Desprez, Cloth of Gold. We name only twelve instead of twenty-four, as many of the climbers are only single-bloomers, as the Boursaults, Ayshire, &c. We have not mentioned the Banksian Roses; both the yellow and white are well worth a wall, but require a good position. Those marked with an asterisk are the most hardy.

CUCUMBERS IN POTS (G. M.).—Plants in pots require more care in watering than those planted out, and we should grow them in the latter way. We have no doubt of your succeeding with them in pots; the plants will come earlier into bearing, and will not go so much to wood as those planted out, but they are not so durable. The Melons we should plant out in a bed for the same reason as we would plant out the Cucumbers—viz., they do not need so much care in watering, and produce larger fruit than pot plants.

ANNUALS FLOWERING LATE (An Amateur).—The Large-flowering Emperor Steck sown in April will have fine flowers in autumn. The Intermediate Stecks sown at the same time are also good. Calliopsis Burridgei, C. Drummondii, Candytuft sown early in June, Centaurea Cyanus in varieties, Erysimum Perofskianum, Chrysanthemum Dunctei flore-pleno, Dianthus Hedewigii flore-pleno and var. diadematus, Branching Larkspur var., Leptosiphon desfordensis and var. albus, Lupinus nanus, Striped French Marigold, Large-flowering Mignonette, Scarlet and Striped Invincible Sweet Peas, Dwarf Double Scabious, Senecio elegans vars., and Verbena venosa.

CONNOVER'S COLOSSAL ASPARAGUS (Idem).—Your plants of this transplanted last spring, and which gave a good many shoots large enough for cutting, may safely have the large shoots cut this spring; but we should not continue cutting after the middle of June, and we would only cut the large heads to avoid weakening the plants. We should continue to give plenty of manure of all kinds throughout the summer. It is the means of securing fine heads for cutting the succeeding year.

SOILING CENTAUREA CANDIDISSIMA AND MESEMBRYANTHEMUM CORDIFOLIUM VARIEGATUM—SOIL FOR AZALEAS (Idem).—The seeds of the Centaurea should be sown in a pot or pan of light loamy soil, a third of leaf soil, and a sixth of silver sand well mixed and made fine, especially at the surface of the pot. Cover the seed with fine soil about the eighth of an inch deep. Place the pots in a hotbed with a temperature of 65° to 70°, keeping the soil just moist. When the seedlings appear place them near the glass, and give no more water than is sufficient to keep the soil moist; and when they have the second leaves put them off singly in the compost used for sowing the seed: 3-inch pots are large enough. Return them to the frame and shade them from bright sun. Their growth should be encouraged until the early part of May, when they should be hardened off. Plant out at the end of May or early in June, by which time they will be nice plants. The Mesembryanthemum should be sown in the same way, only the soil must be more sandy, and the seeds should be only just covered with very fine sandy soil. To that named for the Centaurea add a third of old time rubbish. When the seedlings can be handled they may be pricked off about an inch apart in pans; and when they meet they may be potted singly in 3-inch pots, and again placed in the frame until established. The plants may be grown in a cold frame in summer, and kept in winter in a greenhouse or pit from which frost is excluded. The plants will not be strong enough to turn out until the second year. Indian Azaleas succeed admirably in a compost of three parts brown fibrous sandy peat, and one part very turfy light loam, with a fifth part of silver sand, the whole broken up small, and well mixed but not sifted. Drain the pots well.

HYACINTHS NOT GROWING WELL (Sussex).—We are unable to account for the Hyacinths growing so badly, but we do not think it could arise from the bulbs having been imperfectly ripened. We do not approve of placing them from a cold frame in a stove for a time and then moving them to a greenhouse. From the frame they should have been introduced to a greenhouse not over 45° at night, and kept there not less than three weeks; then, if necessary to have a few in flower early, they might have been placed on a shelf near the glass in the stove, but they would do better in a temperature of 40° to 45° at night, and 50° by day from fire heat—in fact, these are the highest temperatures to which the bulbs should be subjected if they are to have good compact spikes. We think the sudden change from the frame to the stove is the cause of the mischief. Cinerarias when flowering, or at any stage of their growth, should not have the pots set in saucers filled with water. Though they delight in coolness and moisture at the roots, yet the water in the saucer causes the soil to become sodden, and the plants are apt to die off, suddenly flagging, with the soil little better than mud when the sun is at all powerful.

CHRYSANTHEMUM BUDS NOT OPENING (W. B.).—The probable cause of the buds not opening is, that they were infested with thrips or green fly when in an early stage of development.

YOUNG APPLE ESPALIERS (Idem).—The leader ought to be cut back now, cutting it just under one of the horizontal wires. When the trees start into growth, one leading shoot must be trained in a vertical position, and one on

each side laterally along the wires. If the leading shoot is very strong it may be pinched at the next wire; three shoots will break from the leader, which may be treated as the others. The young side shoots ought to be cut back pretty closely in summer to induce the formation of fruit buds.

BLACK HAMBURG GRAPES NOT COLOURING (J. Mackenzie).—Overcropping is doubtless the cause; you also overcrowd the house with young wood. Our own method of pruning is that called by gardeners the short-spur system. We cut back to the second eye, and when the young shoots are sufficiently advanced in growth we retain that with the best bunch, and rub off the others. Do not allow your Vines to grow as you saw them in Italy. You might have a good show of bunches, but none of them would be fit to present on the table, and the Vines would be very much injured for next year's crop. All young wood intended to bear fruit next year should be freely exposed to the light.

REPORTING CAMELLIAS (G. M. B.).—You may now report those done blooming and put them in heat at once, or they may be reported after they have made their young wood.

CELERY DECAYING (S. P. S. X.).—Celery in general has not been good this season, and has kept badly owing to so much wet. The Sandringham Dwarf White is an excellent sort. We advise you to try Williams's Matchless Red. In earthing-up Celery be careful that the soil do not fall into the heart of the plant. Always earth-up in dry weather and when the soil is dry.

IN-DOOR HOTBED—PELAGONIUM AND GERANIUM (Espinasse).—A hotbed in or under a bathhouse is so called. There is no very great difference between what are commonly called the Geraniums used for bedding purposes and the Pelargoniums used for in-door flowering. Both are Pelargoniums. Pelargonium is characterised by having usually seven stamens and unequal-sized petals; Geranium, by having ten stamens and equal-sized petals; and Erodium by having five fertile anthers usually. The three genera are nearly allied. We do not know Dr. Regel's recommendation.

HOTBED MAKING (St. Bridget).—There are directions in our No. 617, which you can have for four postage stamps if sent to our office with your direction.

HEATING A HOTHOUSE.—"I have a double span-roofed stove with a wall up to the eaves on the north side, and the west end joins the conservatory. The spans rise 2 feet, and the house is 10 feet to the eaves, so it will average 11 feet high. It is 16 feet wide and 25 feet long. The wall at the front and ends is 2 feet high, the rest glass. How many feet of 4-inch piping will be required to keep up a stove temperature?—J. R."

[Under the circumstances you will want about 200 feet of 4-inch piping to keep up a temperature averaging 65° in severe weather. If you would be satisfied with 60°, and even 5° or 10° less in severe weather, 50 feet less of 4-inch piping might do. As the piping is to be sunk under a grating, we would say fully 200 feet, as it is better to have plenty of pipes than to have them too hot.]

CUCUMBER BED OVER HOT-WATER PIPE—MUSHROOMS IN GREENHOUSE VINEY (A Nine-years Subscriber).—Fill in over and round the hot-water pipe with brickbats; bring them 1 foot above the hot-water pipe, and over the rubble place a layer of turf grass downwards, or, failing such, the rougher parts of the compost, and then the soil for the plants. One pipe for top heat is too little. You ought to have at least two 4-inch pipes for a pit 10 feet wide, and then you would only be able to plant out early in March. Under the circumstances we should not advise planting until April. You may have other means of affording heat, as fermenting materials placed within the house, and in this case you may commence at once. You will need a temperature of 60° to 65° at night and 70° by day, with a rise from sun heat of 10° to 15° with air. You may grow Mushrooms successfully in your greenhouse viney under the stage, providing you can keep the bed dry for six weeks after it is spawned and earthed; but should the bed be liable to suffer from wet, occasioned by drip from watering the plants on the stage over the Mushroom bed, it is likely the latter will not succeed.

STOVE WITHOUT CHIMNEY (G. L. R.).—No such stove, whether the fuel be patented or unpatented, can be placed among plants without injuring them.

CAMELLIA (Reader).—We have given the correct spelling.

NAMES OF PLANTS (S. Ambler).—Cecyngne cristata, Ldl. (S. D.).—A species of Lelia, probably L. anceps. (George P.).—A species of Isoplepis. (At a Loss).—Your specimens are very insufficient. 1, Much crushed, is probably Lelia anceps; 2 and 3, Species of Maranta or some allied genus; 4, Begonia sp.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY SHOW JUDGES.

It is with great satisfaction we announce that our much-esteemed Judge, Mr. Hewitt, has recovered from the accident which he met with on his journey to the Crystal Palace, and that he has resumed those duties which for so long a period he has filled with so much advantage to the real lovers of poultry. No one has done more to promote the interest of poultry exhibitions, and we know of no one who could be spared with more difficulty, his unimpeachable conduct having helped much to raise and sustain the position of poultry shows, and his decisions giving such little cause for criticism.

The judge is the most important officer in connection with a poultry show. An influential committee may be formed, a good Secretary elected, some most distinguished patrons announced, valuable prizes offered, an attractive schedule issued, a great entry obtained, a suitable building found, some fine specimens, compete, and all that the most careful consideration and forethought can suggest be done to promote the success of a show; and when completed, if the judging is confided to an incompetent or prejudiced hand, all the former labours will be unappreciated, and the result will be dissatisfaction and disgust. Even the winners will feel that the honours they have obtained are due to accident or injustice, and pity the credulity or the injustice of those who were prevailed upon to make such a selection.

In calling attention to this matter we are pleased to see that the importance of this step has been well appreciated by nearly all committees, hence the cause why Mr. Hewitt's services have been so eagerly sought for. In addition to being one of our best judges, Mr. Hewitt has other characteristics which have made him particularly acceptable, and which will be carefully weighed in connection with all candidates for this most important office. Mr. Hewitt never exhibits; no one hears of his breeding, selling, or purchasing stock, or indulging in any shape or way in the prejudices for this or that taste for fowls. This has caused his awards to be received as perfectly free from all suspicion.

Mr. Hewitt's absence at Birmingham caused some round pegs to be put in square holes; and although the mistakes then made caused a little mortification, his popularity was so great that the disappointed ones consoled themselves with the fact that Mr. Hewitt's illness was the cause, and all earnestly hoped that they would soon see him back in the field of his labours. Since then two months have elapsed, and during this period some new to the office have been called upon to fill his position, and in reviewing them we cannot yet recognise a worthy substitute for Mr. Hewitt; and, although we by no means agree with all the complaints and suggestions that have been made, we think sufficient cause of dissatisfaction has arisen to open the question; and as poultry shows are largely on the increase, we think it is time to consider where we are to efficiently increase the number of his coadjutors.

In electing men to this most important office, it may be worth considering how appointments of a similar nature are made, and the considerations that influence those elections. In selecting men to fill the high offices of state, in addition to their actual qualifications, it is necessary they should not be partisans of any particular cause, but should be men of firm and evenly balanced minds. A lawyer when made a judge can no longer practise as a pleader; and the reasons are equally obvious why a poultry judge, when devoting himself to that office, should resign both breeding and exhibiting, for in his capacity of judge he may be called upon to decide upon the merits of birds which he has himself bred, and which have been transferred to other hands. We have heard of such a case, the judge upon recognising them rightly resigning the class; but exhibitors generally are not told of a circumstance of this description, and it is not always that a second Judge is at hand to relieve a brother from such an unpleasant dilemma.

Further, this position of a judge of poultry may be equally compared with the higher office to which we have referred. It is important that he should be in a position which would deter exhibitors from offering a bribe. Although, perhaps it will hardly be expected that, in a case in which honour is supposed to be the gain, people will stoop to dishonour to purchase it, facts have from time to time come before our notice which show that some will dare any means to obtain these prizes, and that people will stoop to any acts of deception, and adopt the most shameless artifices to impose on a judge; while others, not so clever in manipulation, will offer the judge a new hat, new suit of clothes, &c., for his favourable consideration. It is, therefore, most desirable to select men to whom such offers would not be a temptation, and whose position would place them beyond the chance of being influenced by such corrupt proposals.—AN OBSERVER.

THE POULTRY OF 1872.—No. 2.

HAVING, in my last notes upon this subject, given my own ideas as to the progress or otherwise of the Brahmas, I come next to the Cochins; and I think few fanciers will be disposed to deny that Buffs at least showed during the past season a very considerable advance. I have not for years observed such a number of birds with the grand old "lumpy" development. No doubt this was mainly lost for years by the insane dread of the hock (still felt by one or two judges I could name, whose awards present accordingly a conspicuous contrast to those of the arbiters most acknowledged in the fancy), which had the effect for a time of annihilating proper leg-feather; for—and it is worth noting—good feather and the essential points of cushion and fluff will, as a rule, always stand or fall together. No one dislikes real vulture-hock more than I do, and especially does no one hate a plucked bird more; but I have heard birds called hocked which in that point were simply perfect, and the mischief done by such ignorance was incalculable. However, during 1872 we saw plenty of real Cochins; and I for one was glad also to see the richer, deeper shades of Buff again in favour. How many good Buff strains were ruined in colour by the rage for that very light colour almost running into Silver Buff, the breeders best know; and it is on many accounts a source of gratification that the deep Lemons and rich Buffs should be once more in fashion. Breeders have entered upon a sound path, and I fully expect to see still better birds in 1873.

In Partridges the most noticeable feature is the evident tendency of both breeders and judges to prefer the solid pencilling

which used to be called Grouse, to the streaky feathering which used to be known as Partridge. The Grouse marking is bred as light as the Partridge used to be, but still solid and free from streak; and I confess I think the change an improvement. It not only pleases most eyes better, but is harder to breed than the streaky marking, and hence may seem more worthy of the fancier. The hens seem to have shared the advance of Bufts in shape; but I do not myself think the same can be said of the cocks, which, moreover, show an increasing tendency to streamers (often forked) in the tail, want of fluff, and too little width of saddle.

In Whites the hens appear stationary; but the cocks have been shown both whiter and more Cochins in shape this season than usual. I may also note that better Blacks have made their appearance than have been observed for a long time. There is a real opening in this variety for any skilled breeder, as even a decent pen of Black Cochins rarely fails to secure a prize in the Any variety class; and a really good pen would win almost everywhere. A few good Cuckoos have also been shown.

Dorkings I must say have, according to my judgment, perceptibly retrograded. Some pens of old Grey hens have shown the standard of excellence of two or three years back; but I have seen no chickens which appear likely to take their place among the winners of the year. In cockerels the falling-off is perhaps less marked, but is still evident. Doubtless the most extraordinarily wet season has had much to do with this. Few chickens have been perhaps so large as usual, and in Dorkings the difference is fastened upon at once, whilst in other varieties it is not given so much prominence. Another noteworthy point is the growing tendency to make Grey Dorkings birds of colour. All must have noticed that the very dark hens have had a perceptible preference given them over the greyer marking which once gave the name to the fowl. In Silver-Greys, on the contrary, the tendency seems precisely the other way—viz., to get or encourage more size at the expense of all that used to be considered the only proper colour. Many prizes have been given to cockerels which were not Silver-Greys at all, but were very large. White Dorkings appear to me to be getting yellower and coarser in the combs, at least so far as the cocks are concerned.

As regards my own individual impressions, I cannot give any better character of the Spanish; though here again I have not the slightest doubt the miserable weather is chiefly in fault. Faces have been coarser, and especially the beautifully smooth ear-lobe seems lost. It used to be bred without a fold, now an unfolded deaf-ear is rare indeed. Rough faces seem the rule. I believe much of this to be owing to the recognition of "trimming" the faces in this breed. I have no wish to re-open a fruitless controversy on this point, and freely admit that it is so recognised now, and admitted by all parties that any charge of fraud would be ridiculous—even years ago I never did charge fraud in this particular, for this very reason. All I say is, that formerly the skill of fanciers bred birds whose faces needed no trimming, and that the recognition of this practice, doing away as it did with the necessity for such really fine quality of face, has caused it to be lost. I have seen birds in old days which hardly needed a single hair being extracted; but rare indeed are such birds now, though it is curious to see how Bristol still keeps up its old reputation for this breed, first established by the skill and judgment of Mr. Rake, maintained by Mr. Roué, at present retired, and best known as the able Secretary of the Bristol Show, and still upheld by Mr. Jones and others.

I hope to finish these—which, I would again state, are given simply as my own personal impressions—in another short paper.—L. WRIGHT.

OYSTER SHELLS FOR POULTRY.

I HAVE long taken your paper, and almost always agree with your remarks on poultry and poultry-feeding, although I do sometimes differ. I use a food which you never seem to hint at, but which causes my dozen hens to lay on the average of the last two years (and I am now keeping the number for the third year), five eggs a-day, besides rearing on it and other things, but it principally, almost a chick for every egg set. Now I wish to trouble you to give the reason why you say in a recent number, "We should advise you to discontinue pounded oyster shells, they are a fond invention," &c. I am no chemist; Nature guides me, and I pretty closely watch her. I have no doubt you have some very good reason for giving the above advice; and my reason for questioning it is, that about three years ago the run my hens had was much curtailed, and they did not produce the eggs they had done, and frequently laid wind eggs. This made me look about for a remedy, and amongst other things I tried old lime rubbish; but although this stopped the wind eggs, still the shells were soft—that is, I mean they had not a brittle bright look, but you could almost rub them away with your finger. By accident one day, instead of some oyster shells being thrown into the dustbin, they were thrown down in the yard, and when I went out several of the hens were pecking at them, so I had them pounded-up, and I have never since been without them

Unless you can point out some very good reason, I think the advice you have given (you must excuse me), is unfortunate. What are the chemical properties of an oyster shell? No doubt you know, but most certainly the oyster shells I get contain what my hens, and the hens of several other friends who would not now on any account discontinue their use, want; and as we all look up to you as the authority in poultry matters, and I am quite ready to admit, not without reason, we, myself and friends, would like to know why you condemn oyster shells?—**OYSTER SHELL.**

[Our answers to those who seek our advice are based upon the details stated by our correspondents. In the case you refer to the question was, What caused ill-flavoured eggs? and as there was nothing objectionable in the food given to the fowls, and the only things that might disagree with them were the powdered oyster shells, we advised these to be discontinued. Oyster shells, besides carbonate of lime, contain 34 per cent. of animal matter, and we know of poultry whose eggs tasted fishy from having seashore refuse given daily. In your case we think powdered oyster shells had the credit of the cure which the lime rubbish began, and would have completed if continued. Where lime rubbish or powdered chalk could not be obtained, we should give our fowls powdered oyster shells.—**EDS.**]

JUDGING SILVER-GREY DORKINGS.

I AM sorry this subject has not been more freely discussed in your Journal, and that the Judges have not given us their views upon it. The necessity for some new standard of excellence is more apparent than ever, after the decisions at the Maidstone Show. Your report of that Show as regards Silver-Grey Dorkings, says that "This class was so indifferent that we shall soon have to exclude the breed altogether from our shows in the south of England, where they seem to obtain little favour." Now, it is very remarkable that amongst the birds exhibited at Maidstone were the bird which took the first prize at the Crystal Palace, and the second and third-prize pullets at the same place, not one of which was even commended at Maidstone. Such judging I declare to be simply ridiculous. The Maidstone Committee, moreover, excluded the Silver-Grey Dorkings altogether from competition for the cups, and then wonder that the entries are not more numerous! Let the committees of poultry shows in the south of England be as liberal to exhibitors of this beautiful class of fowls as they are to other classes, and they will secure plenty of entries; and let the judges issue a standard of excellence, and exhibitors will know what to expect.—**THOMAS E. CATO, Wye Vicarage.**

CAN MERE COMPANIONSHIP WITH ANOTHER VARIETY AFFECT THE OFFSPRING?

I HAVE bought some very pure-bred Light Brahmas, and have given over keeping Dorkings, of which breed I retain two hens for the present, on account of their well-known early sitting propensities, in order to have some early hatchlings. Would there be any danger in letting these two hens run with the Brahmas? Do you think it would affect the cockerel and spoil the strain? I have been assured by a well-known breeder of Light Brahmas, who kept a few Game Bantams with his other birds, that the Brahmas threw foul-marked chicks while the Bantams were in sight, and never did so before, nor since he has parted with the Bantams. Mixing was, of course, out of the question, but he is of opinion that fowls are affected by the sight of various objects.—**LIGHT BRAHMA.**

[Experience as regards this mysterious subject varies, probably owing to different characters of birds. In very many cases no influence can be traced, from which persons whose experience is limited have rashly concluded that none exists. But we have known and heard of many cases in which such influence was most clearly traceable. The probability in any given case is decidedly against ill-results, but there is no certainty. Why not in this particular instance try White Dorking hens?—**EDS.**]

NORTHAMPTON POULTRY SHOW.—The schedule of prizes is very liberal, twenty-three silver cups being offered, and in each case the value of the cups can be had in money if preferred. There are twenty-three classes for poultry, and most of the birds will be shown singly, as will be the Pigeons, in which section there are twenty classes. There are ten classes for Rabbits, and eight for Cats, and the entry fees on the whole are moderate. In the case of Rabbits each entry is entitled to one vote for the Judge.

BRADFORD PIGEON SHOW.—We have received a schedule of this approaching Exhibition. Judging from the array of cups and prizes it ought to be one of the most successful of the year. The cups are given to nearly every two classes of the same breed, with three money prizes in each class. The best pen in

the Show has its cup increased in value to five guineas, while a ten-guinea cup is offered to the winner of the most points, and a cup for the most points in the Antwerp and common Tumbler classes is also given; but this does not exclude these classes from counting for the larger cups. The Variety class has a cup to itself, as have also the Selling classes. The schedule is, with the exception of one Selling class, for single birds. A separate class is made for the new style of Trumpeters, so that the old style of bird may once more distinguish itself.

RAILWAY CHARGES.

EXHIBITORS who, like myself, were wrongfully charged for the transmission of poultry to and from the Maidstone Show, may benefit by knowing that by lodging a complaint with the general manager I have had the extra charge returned. Some companies are liberal enough to return free, over their lines, all unsold specimens. The South-Eastern Railway Company not only do not approve of this, but in my case, and in that of another exhibitor whom I know, made an addition to the ordinary charge for the return journey. I hear from the Secretary of the Maidstone Show that he has received many complaints of the South-Eastern Railway Company's excessive charges, and I have thought it well to call public attention to the matter, in order that others may, if they please, obtain like redress with myself.—**J. G. B. KNIGHT.**

DEVIZES POULTRY AND PIGEON SHOW.

THIS Show was held on January 28th and 29th, under the management of amateurs of long experience; the whole of the plans were carried out with remarkable punctuality. Than the Devizes Corn Exchange, in which the Show took place, no building need be desired of greater capabilities for displaying to advantage the valuable specimens in competition. We may add, the feeding and general attention bestowed on the birds was most praiseworthy.

Dorkings, except Silver-Grey, headed the list, and consisted of ten very creditable entries. Mr. John Martin was first with his well-known rosy-combed pen. Among the other pens were some of the finest hens we have seen during the past season, but many of the cocks were sadly out of feather. In the Dorking class for Silver-Greys or Whites, Messrs. Wren & Page took the Dorking cup with a grand pen of Silver-Greys of great merit, and shown in high condition. In the *Cochins* the Buffs and Whites were decidedly the best shown, the Partridge-feathered being a very ill-conditioned class throughout. Mr. W. A. Taylor here secured the cup with a pen of Buffs that require a short rest before they will meet the public view in the robust health they possessed a short time back. The *Brahmas*, though heavy classes, were not nearly equal to anticipation; but a very finely-conditioned pen of Light-feathered ones, exhibited by Mr. J. Rodbard, obtained the silver cup. The *Spanish*, with the exception of the three prize pens, were an ill-assorted class, most of them being out of condition, and not a few decidedly unhealthy. In *Game* fowls Mr. Samuel Matthew, of Stowmarket, was very successful with splendid specimens, shown in the very height of condition and feather. Mr. Stagg's collection of Game birds was also very creditable. We much regretted to see among the Game, some otherwise first-class fowls with the ear-covers (not ear-lobes) out completely off, leaving the orifice fully exposed, without any protection whatever; it proved hideous to the eye, and in severe weather could not be otherwise than highly prejudicial to the health of the fowls thus cruelly mutilated. *Hamburgs* and *Polands* were much better classes than those of former years, but it was in the *French* and *Malay* fowls more especially that marked progress was apparent. *Crève-Cœur*s were abundant, and of general good quality; several pens of *La Flèche* were also exhibited. In the Variety class were good specimens of *Sultans*, *Black Minorcas*, *White Leghorns*, *Scotch-Greys*, and *Plymouth Rock* fowls. Of the *Bantams*, the *Sebrights*, *Booted Black*, and *Black Red Game* were the best varieties, but these classes were not large in numbers. Only four pens of *Aylesbury Ducks* competed, but all of them were very good. In *Black East Indian*, Mr. Sainsbury proved the excellence of his breed of this notably beautiful variety by securing the silver cup, first and second prizes, and two high commendations, with an entry of four pens. Among the remaining pens of this breed, it being a strong class, were some excellent-plumaged birds, but far beyond the standard size allowable in this breed. A truly interesting Variety Duck class was most attractive, and as the day was one of bright clear sunshine throughout, the splendid colour of their plumage was seen to great advantage. Heavy Selling classes brought together numerous buyers, and many really cheap lots were entered.

The *Pigeons*, of which the entries this year showed a great increase, were admirably placed on the top of the single tier of poultry pens, so that they could be inspected with comfort by everyone, most of these classes being unexceptionably good.

A specially advantageous rule of allowing the fortunate

winners of silver cups the choice of any other article of plate of the same value, was duly appreciated; a choice collection of really useful pieces of plate being displayed for the purpose on a stand in the Exhibition. A few cages of singing birds added to the general attraction, and the attendance of visitors was most satisfactory.

DORKINGS.—Coloured, except Silver-Gray.—1, J. Martin, Claines, Worcester. 2, H. K. Jordan, Bridgeend, South Wales. 3, Miss J. Mulward, Newton St. Loe, he, J. Watts, Birmingham. *Any other variety*.—1 and Cup, Wren & Page, Lowestoft. 2, O. E. Cresswell, Early Wood, Bagshot. 3, Mrs. Hayne, Fordington, Dorchester.

COCHINS.—Cinnamon or Buff.—1, Cup, and 2, W. A. Taylor, Manchester. 3, S. R. Harris, Cansgrave, St. Day. *he*, Mrs. Allsop, Hindup Hall, Worcester. *Partridge*.—1 and 2, W. A. Taylor. 3, J. K. Fowler, Aylesbury. *White*.—1, Cup, and 2, R. S. S. Woodgate, Farnbury, Tunbridge Wells. 3, R. W. Beachey, Kingskerswell. *he*, O. E. Cresswell.

BRAMMAS.—Dark.—1 and Cup, E. Ensor, Bristol. 2, J. Watts. 3, E. Pritchard, Tettenhall, Wolverhampton. *he*, E. Ensor, Bristol; T. H. Williams, Brecon; J. K. Fowler. *Light*.—1 and Cup, J. R. Rodhard, Wington, Bristol. 2, H. M. Maynard, Holmwood, Isle of Wight. 3, M. Leno, Markate Street. *he*, Mrs. T. Turner, Avon, Kingwood (2).

SPANISH.—1 and Cup, J. Boulton, Bristol. 2, R. S. Samway, Beaver Town, Southampton. 3, H. Sheppard, Blean, Devon. *he*, Mrs. Allsop, R. S. Samway.

GAME.—Black-breasted or other Red.—Cocks.—1 and Cup, S. Matthew, Stowmarket. 2, W. H. Stagg, Netheravon, 3, G. S. Cole, Llanelli. *he*, H. E. Martin, Sculthorpe. *he*, W. H. Stagg (3). *Hens*.—1 and Cup, S. Matthew. 2, W. H. Stagg. 3, E. W. Woodman. *he*, Dr. W. K. Bullmore, Falmouth; E. F. Woodman, Cirencester. *he*, H. E. Martin; R. H. Tyte, Mincinghamp.

GAME.—Any other variety.—Cocks.—1, J. T. Browne. 2, S. Matthew. 3, Hon. C. and Rev. F. Dutton, Windrush Vicarage, Burford. *he*, Dr. W. K. Bullmore. 4, F. Bailey, Caine. *Hens*.—1, S. Matthew. 2, Hon. and Rev. F. Dutton. 3, E. Woodham, Ulverston.

HAMBURGERS.—Gold or Silver-pencilled.—1 and 2, H. Beldon, Goststock, Bingley. 3, Miss Perrin, Upper Easton, Bristol. *he*, H. H. Thompson, Coleshill; H. Moore, Weston-super-Mare. *Gold or Silver-spangled*.—1 and Cup, T. Walker, Jun., Denton. 2 and 3, H. Beldon. *he*, J. Long, Forest Hill. *he*, J. Messer, Reading. *Black*.—1 and Cup, T. Walker, Jun. 2, H. Beldon. 3, T. Bush, Bristol.

POLANDS.—1, A. Crittenden, Brighton. 2, J. Royle, Manchester. 3, H. Beldon. *he*, Capt. F. G. Coleridge, Wargrave; J. Hinton, Warminster.

FRENCH.—Houdans.—1, J. K. Fowler. 2, H. Feast, Swansea. 3, M. H. Sturt, Pusey. *he*, M. H. Sturt; Miss E. Williams, Henllys, Berriew; W. O. Qumbell, Newark. *Any other variety*.—1, W. H. Crabtree, Levenshulme, Manchester. 2, H. Feast. 3, W. Humphreys, Liscard. *he*, A. E. Deane, Winchester; E. Lantour; Hon. C. R. B. Washington, Oxon; M. H. Sturt; J. K. Fowler. *he*, Rev. G. Chilton, Littleton, Guildford.

MALAYS.—1, Rev. A. G. Brooke, Shrawardine. 2 and 3, J. Hinton. *he*, J. R. Rooth, Chesterfield.

ANY OTHER VARIETY.—1, S. R. Harris (Black Minorcas). 2, R. Loft, Woodmansey (Sultans). 3, Rev. N. J. Ridley (White Leghorns). *he*, R. S. S. Woodgate (salties); Wren & Page (Scotch-Greys); J. Long (Plymouth Rock). *he*, J. Watts (Sultans).

GAME BANTAMS.—Black-breasted and other Reds.—1, E. Payne, Cardiff. 2, S. Stephens, Jun., Ebberly, Stroud. 3, A. Ashley. *Any other variety*.—1, A. Ashley. 2, G. E. Palmer, Warminster. 3, G. M. Hale, Bradford-on-Avon.

BANTAMS.—Gold or Silver-laced.—1, 2, and 3, M. Leno. *he*, C. H. Poole, Bridgwater. *Any other variety*.—1, E. Cambridge, Bristol. 2, Rev. W. Serjeantson, Acton Burnell. 3, J. Watts. *he*, R. H. Ashton, Mottram; T. Davies, Redland, Bristol.

DUCKS.—British.—1 and 3, J. K. Fowler. 2, J. Hedges, Aylesbury. *he*, Mrs. Peasey, Ishbury. *Rouen*.—1 and 2, J. T. Browne, St. Ansell. 3, J. H. Shore, Watley, Frome. *he*, E. Ponting, Watley, Frome; F. R. Moore; J. H. Hoit, St. Ansell. *Black East Indian*.—1, Cup, and 2, G. S. Samsbury, Devizes. 3, M. Leno. *he*, R. S. S. Woodgate; Mrs. Hayne, Fordington; G. S. Samsbury (2); S. Burn, Whitby. *he*, Mrs. Hayne; W. H. Stagg; J. J. Maldeu, Biggleswade. *Any other variety*.—1, M. Leno (Carolina). 2, W. Boucher, Notting Hill (Mandarin). 3, W. Binns, Pudsey (Whistlers). *he*, W. Binns; M. Leno. *he*, W. Boucher (Carolina).

SELLING CLASS.—1, R. W. Beachey. 2, M. H. Sturt. 3, J. Hinton. *he*, Rev. N. J. Ridley. M. H. Sturt. *he*, Capt. F. G. Coleridge; E. R. Gray, Frome; M. H. Sturt; R. H. Nicholas; T. Davis, Warminster; Miss E. Browne; J. Chisham, Jun.; J. Watts.

PIGEONS.

CARRIERS.—Cocks.—1, R. Fulton, New Cross. 2, H. Yardley, Birmingham. *he*, C. L. Gilbert. 3, Babb; W. E. Nalder; H. M. Maynard (2). *he*, F. Hayman, Exeter; W. H. Bell, Bath. *Hens*.—1, R. Fulton. 2, H. M. Maynard. *he*, C. L. Gilbert. R. Fulton; W. E. Nalder, London; H. M. Maynard. *he*, H. Yardley.

POUTERS.—Cocks.—1, Mrs. Ladd, Culne. 2, R. Fulton. *he*, G. C. Turner, Bath. C. L. Gilbert; R. Fulton; Mrs. Ladd; W. J. Stent, Warminster. *Hens*.—1 and *he*, Mrs. Ladd. 2, R. Fulton. *he*, C. L. Gilbert.

TUMBLERS.—Almonds.—1 and 2, R. Fulton. *Any other variety*.—1, A. B. Douglas, Homelock. 2, R. Fulton. *he*, F. Wise, Oxford. *he*, E. Ollis, Devizes.

BARBS.—1, C. L. Gilbert. 2, H. M. Maynard. *he*, R. Fulton; H. M. Maynard.

FANTAILS.—1, H. M. Maynard. 2, F. Braund, Bideford. *he*, H. Yardley; Miss J. Milward; G. S. Samsbury; J. F. Loversidge, Newark.

DRAGOONS.—1, R. Fulton. 2, G. South, London. *he*, C. L. Gilbert; R. Fulton; G. South; London; W. H. Mitchell, Moseley, Birmingham.

ANTWERPS.—1, R. Harvey, Chaddington. 2, E. F. Wilson, Brighton.

JACOBS.—1, G. South. 2, R. Fulton. *he*, H. M. Maynard.

TACAPETERS.—1 and 2, R. Fulton.

TURKISH.—1, G. South. 2, F. Braund. *he*, C. A. Crafer, Wallington; R. Fulton; S. Salter, Egrove; F. Hoddgins, Salisbury.

NUNS.—1, Rev. A. G. Brooke. 2, J. Watts.

OWLS.—1, R. Fulton. 2, A. B. Douglas.

RUNTS.—1, Mrs. Clark, Westminster. 2, S. Salter. *he*, H. Yardley.

ANY OTHER VARIETY.—1, J. H. Watkins, Hereford. 2, C. L. Gilbert (Maltese).

SELLING CLASS.—1, J. Watts. 2, H. M. Maynard. *he*, Mrs. Ladd; F. Braund; H. Yardley; J. Watts.

JUNGES.—Poultry: Mr. R. Teebay, Fulwood, Preston; Mr. J. Dixon, North Park, Clayton, Bradford; and Mr. E. Hewitt, Sparkbrook, Birmingham. *Pigeons*: Mr. F. Esquilant, Effra Place, Brixton.

THE BANTAM COCK.—One morning a gentleman who lived in Falkirk was looking out of the window of his room, when he saw a flock of sparrows flying about in a very strange manner on the other side of the street. Wishing to find out the cause, he opened the window, when he was sorry to see that one of the young birds had fallen from its warm nest, which had been built under the tiles of the house. There the poor little bird lay on the ground, unable to fly, and the old birds unable to lift it up. A fine Bantam cock, which seemed to know what was wanted, came forward, and very gently took up the poor little bird in his beak. He then mounted upon an empty cart, from

which he flew upon the roof, and stretching his neck out over the edge of the tiles, put his little charge safely into its nest again. In doing so, however, the noble bird fell upon the ground. He seemed afraid, but not much hurt. After plucking his feathers for a short time, he began to strut about and crow, as if quite proud of his kind deed.—(Stirling Observer.)

WOLVERHAMPTON POULTRY SHOW.

ALTHOUGH the entries were not so numerous as on some previous occasions, the seventh annual Exhibition of poultry at Wolverhampton has never been equalled in excellence. The Agricultural Hall, in which the meeting takes place, is well adapted for the purpose, and if the whole of it could be devoted to the purposes of the poultry alone, the accommodation would be ample for the exhibition of a very extensive collection; but as fully one-half of it has to be appropriated to a dog show held simultaneously, the avenues have to be narrowed so much as to obscure from view many of the lowest tier of pens. The attention paid to both the feeding and watering of the birds could not be surpassed.

The classes of *Dorkings* were scarcely equal to what might fairly have been expected, most of the best-known prize birds of the season being now kept from competition on account of the near approach of the breeding season. The result was, that though the majority on view were really fine specimens, the crack *Dorkings* of the past season were to be looked for in vain. The *Cochins*, more particularly the White and Buff, were admirable and very large classes, none but fowls of noted excellence having even a remote chance of prizetaking. The names of the winners are a sufficient guarantee that the competition was severe. The prizes in Buifs were chiefly taken by Messrs. Taylor, Allsop, Tomlinson, and Henry Lloyd, the bulk of the birds being penned in admirable condition. Although White *Cochins* were shown in perfectly good plumage, the Partridge-feathered looked to disadvantage. In the class for Dark *Brahma* cocks no less than fifty-two birds were shown; eighteen received favourable notice at the hands of the Judges. We regret to say, however, in this class pen 118, exhibited by Mr. W. A. Taylor, of Manchester, was disqualified as being the most grossly trimmed in the hocks that could be believed possible. As the shafts of the hock feathers that had been pulled must have been of great strength, and plucked in considerable numbers, the suffering of the fowl so treated could not have been otherwise than such as would excite the sympathy of most individuals, and the exhibitor richly merited the disgrace consequent on a disqualified card being affixed to the pen, stating the reasons of its being passed over. Surely the time will come, if judges unflinchingly persist in punishing all offenders alike, that owners will think twice before risking detection and the consequences of open exposure. Among the Dark *Brahma* hens there was a considerable number of pens containing the finest specimens in the kingdom. Somewhat strangely, although Dark *Brahmas* were so good, the Light, with the exception of a few of the winning pens, were the worst classes in the Show, a feature that certainly tended to bring out the better ones to great advantage. The *French* fowls were very fine; and as to the *Spanish*, years may pass by before so good a collection may again meet the public eye. Even in the Selling classes were to be found pen after pen so good and so even in quality as to task the discrimination of the most practical breeders of *Spanish* fowls, and no doubt the bulk of them would at most public shows secure the whole of the prizes, as they did at Wolverhampton. It was stated they have become one of the most popular breeds in the district, and all were shown in perfect show trim. *Game* fowls were grand, and, necessarily, very attractive in a neighbourhood in which *Game* fowls are still highly valued for other purposes than exhibition. Mr. Charles Chaloner and Mr. Brierley exhibited their best birds. The *Hens* of the Brown Reds were universally considered the best hitherto seen at Wolverhampton. With the exception of the few prize birds, the *Game Bantam* class was a failure. The entry of *Hamburgs* was not large, but of high quality. Among the most praiseworthy of the remaining classes were the *Turkeys* and *Geese*, both of which were particularly fine. The fancy *Duck* class was also remarkably well filled, and among them were shown some of the best White Call, or Decoy Ducks, that have been brought before the public for many years.

The promoters of the Show may be heartily congratulated on the success of their spirited undertaking, every avenue having been constantly thronged with visitors, who evidently felt interest in its success, and a desire to insure its continuance.

DORKING.—Cock.—1, J. White. 2, H. Lingwood. 3, T. P. Carver. 4, Miss Whittington. *he*, Constance of Dartmouth; J. Robinson; N. Russell; H. N. Tyte; L. Patton. *he*, Miss Whittington. *Hens*.—1, Constance of Dartmouth. 2, H. Lingwood. 3, J. Watts. 4, L. Patton. *he*, Mrs. H. J. Bailey; O. E. Cresswell; C. J. White.

COCHIN-CHINA.—Cinnamon and Buff.—Cock.—1 and 2, W. A. Taylor. 3, Mrs. Allsop. *he*, Mrs. Allsop; H. Lloyd, Jun.; C. H. Matthews; J. Bloodworth; H. Lingwood. *Hens*.—1, H. Tomlinson. 2, W. A. Taylor. 3, H. Lloyd, Jun. *he*, W. P. Ryland; H. Lloyd, Jun.; T. F. Ansell. *he*, H. Tomlinson.

COCHIN-CHINA.—White.—1 and 2, R. S. S. Woodgate. 3, J. Bloodworth. *he*, H. C. White.

COCHINS-GUINA.—Brown and Partridge.—Cock.—1, T. Stretch. 2, W. A. Taylor. 3, Mrs. Allsopp. *he*, E. Tudman; J. Royle. *Hen*.—1 and 2, W. A. Taylor. 3, T. Stretch. *he*, E. Tudman. *c*, J. White; J. W. Taylor.

BRAMA.—Dark.—Cock.—1, T. F. Ansell. 2, Newham & Manby. 3, T. F. Ansell. 4, G. F. Whitehouse. *he*, Rev. J. G. B. Knight; H. Jones; F. Bennett; H. G. Morrell; E. Pritchard; G. W. Whitehouse; T. P. Ansell; J. S. Tainton; Mrs. Woodcock; Earl of Shrewsbury; H. Lushwood. *c*, Miss M. J. H. Cock; W. A. Burnell. *Disqualified*, W. A. Taylor (hocks being grossly trimmed). *Hen*.—1 and 2, T. F. Ansell. 3, H. B. Morrell. 4, Dr. Holmes. *he*, H. Jones; C. Layland; H. Langman; T. Sear. *c*, E. Pritchard; Rev. J. D. Peake; H. Feast.

BRAMA.—Light.—Cock.—1, W. T. Storer. 2 and 4, T. A. Dean. 3, H. M. J. Marshall. *c*, G. White; C. J. B. Maia. *Hen*.—1 and 2, J. R. Robbards. 3, C. Layland. 4, Bloomsbury. *he*, J. Woodworth; M. Leno. *c*, Mrs. H. J. Bailey. **HODDAS.**—Cock.—1 and 2, W. O. C. Oubell. 3, H. Feast. *Hen*.—1 and 2, C. R. B. Wood. 2 and *he*, W. O. C. Oubell. 3, W. D. Ring.

GREVE-CŒUR.—Cock.—1, Mrs. J. Cross. 2, R. B. Wood. 3, H. Feast. *he*, W. D. Ring; R. B. Wood. *Hen*.—1, W. D. Ring. 2 and 3, R. B. Wood. *he*, W. H. Crabtree; Mrs. E. Williams.

SPANISH.—Cock.—1, E. Jackson. 2, J. Hodgson. 3, T. Moore. *he*, J. Walker; J. F. Sillitoe; J. Mansell. *c*, J. Walker; J. Bowness. *Hen*.—1, E. Jackson. 2, J. F. Sillitoe. 3, Mrs. Allsopp. *he*, J. Sillitoe; Mrs. Allsopp; J. Thresh.

GAME.—Black Red.—Cock.—1, P. A. Beck. 2 and 3, P. A. Beck. 4, T. Bottomley. *he*, C. Chaloner; S. Beighton; T. Mason. *c*, J. P. Gardiner; C. W. Brierley.

GAME.—Brown Red.—Cock.—1 and 3, C. W. Brierley. 2, W. Adams. *he*, J. Forsyth; R. Ashley; W. H. L. Clare; W. Watson. *Hen*.—1, E. Jackson. 2, J. F. Sillitoe. 3, Mrs. Allsopp. *he*, J. Sillitoe; Mrs. Allsopp; J. Thresh.

GAME.—Any other variety.—Cock.—1, P. A. Beck. 2 and 3, P. A. Beck. 4, T. Bottomley. *he*, C. Chaloner; S. Beighton; T. Mason. *c*, J. P. Gardiner; C. W. Brierley.

GAME.—Any variety.—Hen.—1 and 3, C. W. Brierley. 2, T. Mason. 3, W. C. Phillips. *he*, P. Bullock; J. Forsyth (2); C. Chaloner; G. C. Wilson. *c*, J. P. Gardiner; J. Forsyth.

AM-CROUS.—Gold-spangled.—1, J. Buckley. 2, N. Marlor. 3, T. Blakeman. *Silver-spangled*.—1, D. Lord. 2, N. Marlor. 3, J. Robinson. *he*, Ashton and Booth; D. Lord. *he*, D. Lord.

HAMBURGERS.—Gold-spangled.—1, J. Robinson. 2 and 3, J. Walker. *he*, D. Lord. *Silver-spangled*.—1, J. Webster. 2, J. B. Wines. 3, H. C. White.

HAMBURGERS.—Black.—1, T. Bush. 2, H. Marlor. 3, R. S. S. Woodgate. *he*, J. Robinson; J. Freeman; T. Bush. *c*, S. Barratt.

SILKIES.—1 and 2, R. S. S. Woodgate. 3, A. Durby. **GAME BANTAMS.**—1 and 2, Capt. Wetherall. 3, T. Barnett. *he*, G. Roden (2). *c*, W. Griffiths.

BANTAMS.—White or Black, Clean-legged.—1, G. J. Bell. 2, R. H. Ashton. 3, J. Bloodworth. *he*, W. A. Taylor; W. H. Shackleton; B. F. Parrott. *c*, M. Leno.

BANTAMS.—Any other variety.—1, H. B. Smith. 2, M. Leno. 3, Rev. W. Serjeantson. *he*, M. Leno; Rev. W. F. Hodgson. *c*, G. Anderson.

ANY OTHER VARIETY.—1, J. Mangall (Silver-spangled Poles). 2, Rev. G. F. Hodgson. 3, J. W. H. Thorpe (La Fleche). *he*, A. Darby (Black Cochins); T. Webb (Silver-spangled Poland); T. Dean (Poland); C. Bloodworth (Silver-spangled Poland); Mrs. A. Holland (Andalusian); F. Unsworth (Poland). *c*, J. E. Price (Black Cochins); T. Webb.

SELLING CLASS.—*Brahma, Dorking, or Cochins.*—Cock.—1, W. A. Taylor (Buff Cochins). 2, C. Layland (White Cochins). 3, J. Robinson. 4, N. Russell (Dorking). *he*, T. F. Ansell (Dark Brahma); H. Langman (Dark Brahma); G. W. Farwell (Dark Brahma); E. Ryder (Dark Brahma); E. Walton (Dark Brahma); Rev. A. Woodhouse (Dark Brahma); E. Woodford (Dorking); R. W. Beachey (White Cochins); C. Morris (White Cochins); J. W. Taylor; J. Benton (Buff Cochins); A. Bamford; H. Yardley. *c*, Miss Whittington (Dorking); C. P. Sanders (Dorking); C. Layland (Buff Cochins); W. A. Barnett (Buff Cochins); H. Tomlinson (Buff Cochins).

SELLING CLASS.—Any variety except *Brahmas, Dorkings, and Cochins.*—Cock.—1, E. Jackson (Spanish). 2, J. F. Sillitoe (Spanish). 3, J. Mansell (Spanish). 4, J. Walker (Spanish). *he*, B. Cox; J. W. Taylor; H. C. & J. W. Mason (Game); J. Walker; C. W. Farwell. *c*, I. Davies; P. Unsworth (Poland).

SELLING CLASS.—*Brahma, Dorking, or Cochins.*—Hen.—1, H. B. Morrell (Dark Brahma). 2, W. A. Burnell (Buff Cochins). 3, H. Tomlinson (Buff Cochins). 4, J. Watts (Buff Cochins). *he*, E. Kendrick, jun. (Dark Brahma); Newham & Manby (Dark Brahma); H. B. Morrell (Dark Brahma); E. Pritchard (Dark Brahma); C. Layland (Dark Brahma); D. Lane (Dark Brahma); N. Russell (Dorking); T. Groves (Buff Cochins); R. W. Beachey (White Cochins); C. Morris (White Cochins); H. Yardley. *c*, M. Leno (Light Brahma); C. Layland (Dark Brahma); F. Bennett (Dark Brahma); D. Lane (Dark Brahma); Earl of Shrewsbury (Dark Brahma).

SELLING CLASS.—Any variety except *Brahmas, Dorkings, and Cochins.*—Hen.—1, J. Walker (Spanish). 2, W. G. Holt (Spanish). 3, J. F. Sillitoe. 4, W. McMillon. *he*, Miss E. Browne; J. Roe (Golden-spangled Hamburgs); W. McMillon (Golden-spangled Hamburgs); Rev. W. Serjeantson (Black Hamburgs); E. Siddall (Black Hamburgs); Miss E. Browne (Spanish); G. Osborne (Spanish); J. Nash (Spanish); G. Jackson (Spanish); G. W. Farwell (Greve-Cœur); H. Yardley.

TRUCKS.—1, E. Kendrick, jun. 2, L. Patton. *he*, Mrs. T. W. Webber. **GEES.**—1, J. Walker. 2, J. K. Fowler. *he*, Mrs. H. J. Bailey; J. Walker. **DUCKS.**—Aylesbury.—1, J. K. Fowler. 2, T. P. Carver. *he*, J. Hedges. *Rowen*.—1 and 2, A. Haslam. *he*, E. Kendrick, jun.; J. N. C. Pope; G. Lawley; W. Penny; L. Patton; W. Evans.

DUCKS.—Any other variety.—1, H. B. Smith (Carolina). 2, Mrs. H. J. Bailey (White Call). 3, J. Walker (East India). *he*, H. B. Hardy (Shelducks); H. B. Smith; M. Leno (Mandarin and Kasarka); H. Yardley. *c*, Hon. Mrs. Colville (Black East India).

PIGEONS.

TUMBLERS.—Almond. and any variety of *Short-faced*.—1, J. Fielding, jun. 2, H. Yardley. *Any other variety*.—1, J. W. Edge. 2, H. Yardley. *he*, H. C. White.

CARRIERS.—Cock.—1 and *he*, W. Siddons. 2, J. Thompson. *c*, H. Yardley. *Hen*.—1 and *he*, W. Siddons. 2, E. C. Stretch.

POUTERS.—Cock.—1 and 2, H. Pratt. *he*, H. Yardley; Mrs. Ladd. *Hen*.—1 and 2, Mrs. Ladd. *he*, T. A. Dean.

FANTAILS.—1, Rev. W. Serjeantson. 2, H. Yardley. *he*, Rev. W. Serjeantson; J. S. Lovelace.

ANTWEAPS.—1, H. R. Wright. 2, C. F. Copeman. *he*, H. Yardley; J. Robbins. *Working or Homing*.—1, G. W. Lascelles. 2, H. P. Price. *he*, J. Davies; H. P. Price; J. T. Ford. *c*, A. Marston.

DOVER.—1, H. Yardley. 2, W. H. Mitchell. *he*, J. Watts; W. H. Mitchell; W. Markland.

JACOINS.—1 and 2, J. Thompson. *c*, H. Yardley. **ANY OTHER VARIETY.**—1, J. Fielding, jun. 2, H. Yardley. 3, W. York. 4, J. W. Edge. *he*, J. W. H. Thorpe; E. C. Stretch; H. Yardley.

SELLING CLASS.—1, J. Watts. 2, H. Yardley. 3, K. W. Richardson. *Extra*, W. T. Storer. *he*, H. R. Wright; J. Morris. *c*, J. Bates. S. Stephens, jun.

The Judges of *Poultry* were Mr. Edward Hewitt, of Birmingham, and Mr. Richard Tebbay, of Preston; the *Pigeon* prizes being awarded by Mr. Tegetmeier, of London, and Mr. Allsopp, of Birmingham.

THE VALUE OF A VOWEL.—The following is said to have taken place in a school near Salisbury, England: "Now, then, the first boy of the grammar class stand up." First boy stands up,

blushing: "Here I be, zir." Examiner—"Well, my good boy, can you tell me what vowels are?" First boy—"Vowls, zir? Ees, of course I can." Examiner—"Tell me, then, what are vowels?" First boy, grinning at the simplicity of the question—"Vowls, zir? Why, vowls be chickens!"

ULVERSTON CANARY SHOW.

This, the second annual Exhibition of Canaries and British Cage Birds, was held in the Victoria Concert Hall, Ulverston, on February 1st. The following is the corrected prize list, sent to us by Mr. J. Cockerton, Hon. Sec.:

BELGIAN.—Yellow.—1, T. Crossdale. *Clark*, Cartmel. 2, 3, and *he*, W. Bradley, Ulverston. *Buff*.—1, W. Bradley. 2, W. Jones, Ulverston. 3, W. Raby, Dalton. *he*, J. Moffatt, Ulverston.

PIEBALD.—Yellow.—1, W. Crowdsom, Ulverston. 2, J. N. Harrison, Belper, Derby. 3, T. Crossdale. *he*, R. Hawman, Middlebrough. *c*, J. Stevna, Middlebrough. *Buff*.—1, J. C. Clemenson, Durlington. 2, J. Goode, Leicester. 3, W. Crowdsom. *he*, W. Raby.

NORWICH.—Yellow.—1, J. Maan, Burton-on-Trent. 2, R. Whitaker, Darley, Derby. 3, G. Wallace, Durlington. *Buff*.—1, R. Whitaker. 2, J. Maan. 3, H. and D. Andley. *he*, J. C. Clemenson. *c*, J. N. Harrison.

LIZARD.—Golden-spangled.—1, J. Taylor, Middlebrough. 2, J. N. Harrison. 3, W. Watson, jun., Durlington. *c*, R. Ritchie, Durlington. 2. *Silver-spangled*.—1, J. Taylor. 2 and *he*, K. Ritchie. 3, R. Hawman.

GOLDFINCH.—1, J. N. Harrison. 2, J. Goode. 3, J. Stevens. *he*, R. Whitaker. *c*, T. Cockerton, Ulverston.

GOLDEN PHEASANT.—1, J. Goode. 2 and *c*, R. Hawman. 3, J. Brown, jun., Penrith. *he*, J. Stevens.

SELLING CLASS.—1, E. J. Ulverston. 2, J. Pennington, Ellers, Ulverston. 3, T. Cockerton, Ulverston. *he*, J. Goode. *c*, T. Crossdale.

JUDGE.—Mr. H. Pollett, Failsforth, Manchester.

THE HIVE CONTROVERSY.

MR. PETTIGREW wishing to pit his straw skeps against movable bar-frame hives, I am quite willing to try conclusions with him. I leave out all question as to which is the best bar-frame hive; but upon the broad principle that they are all superior to hives in which the combs are fixed, I challenge Mr. Pettigrew to the following trials with his straw skeps against the several bar-frame hives I shall use.

1st. To set six swarms on or after a certain day in an enclosure, and let them do their best without any aid or interference whatever unless they send out natural swarms, in which case they shall either be returned to the hives from which they emerged, or hived in hives precisely similar to them. To be judged by the total nett weight of bees, honey, and comb on a day to be named.

2nd. To set six full stocks on the same or a later day in the same enclosure for breeding purposes only—i.e., the multiplication of swarms and the raising of queens, and to be allowed to use every possible means at the disposal of the bee-master for that purpose. All the swarms to be kept in hives precisely similar to those operated upon. Spare queens to be considered equivalent to a certain weight of honey. To be judged by the total nett weight of bees and honey as before, but deducting the weight of the stimulating.

3rd. To set six full stocks on the same or a later day in the same enclosure for honey-gathering only; and should any of them swarm, the swarms shall be returned or accounted lost. To be judged by the quantity of honey obtained.

Each party to be at liberty to use all and every means in his power to develop the advantages of his hives, except in Class 1, which may not be touched under any circumstances. No feeding of any kind to be allowed except in Class 2. No person to be allowed to interfere or in any way assist the owners of the bees unless in their presence. Strict surveillance to be imposed. It being impossible that such trials can fairly take place except near the owners' apiaries, I propose that the bees shall be located in the grounds of some gentlemen willing to permit the trial as near the owners' residences as convenient, and that, once located, they shall not be removed until after the end of the contest.

If Mr. Pettigrew accede to these conditions, or he or any other gentleman can suggest any fairer or more feasible mode of bringing the question to issue, I shall be very glad of early intimation of the same, and provided my bees are not taken out of my own management, shall be very glad to adopt them.—C. N. ABBOTT, *Bee-Master, Hanwell*.

OUR LETTER BOX.

PINIONING WILDFOWL (S. G.).—There is no certainty of keeping Wildfowl however tame, unless it is pinioned. It is only by being constantly reminded that it no longer possesses the power of flight that it remains at home, following the routine of a domesticated animal. No species of Wildfowl, not even those that are tame-bred, can resist the temptation of joining the winter visitors when they come, and more especially when they go. Instinct is as strong in a domesticated as in a wild Duck. Take, for instance, Ducks hatched under a hen from eggs taken from a nest where wild birds breed. They will remain quite quiet and satisfied till they hear in the night the "whew" of passing Wildfowl overhead. They understand it instinctively, and answer it. The birds come down, and the owner has barely congratulated himself on the accession to his numbers, when he finds that all are gone. The only way in which wild birds may be kept unpinioned, is where half a

brood is operated on and the other half left full-winged. We have then known many of the latter remain with their mates. The operation may be performed at any time. It is as well, when it can be done, to do it while they are young—seven or eight weeks old. At that time no bone is formed, and it is necessary only to take a sharp knife, and placing it between the spur and the wing, to cut straight through. With adult birds it is a very easy operation also. If you begin at the point of the wing, you will find a small joint holding the five principal feathers; this is called the flight, and many persons, believing it, have been content to cut it off, only to discover a bird can fly almost as well without it as with it—at any rate sufficiently well to fly away. You will therefore go down the wing till you come to the spur. You will be careful not to cut off the spur; it protects the wound when unhealed, and it is almost the only offensive weapon a Duck has. The spur is connected with the wing by a small web. You may cut through the web, and you will find this brings you to a principal joint. Take the bird in your left hand, holding the wing, and placing it on a post or the corner of a table, put the edge of the knife on the wing immediately above the joint, let a second person strike the back of the knife sharply with a mallet or a stout stick, and the operation is performed. If it can be done, it is well to put them in the water at once; it stops the bleeding.

COCHIN BANTAMS (C. B.).—Two or three years since many were shown. Large prices were made of some, and refused for others. We have tried unsuccessfully for years to buy some. We are now trying to make some.

PULLET'S EGGS DEFORMED (Dark Brahma).—We attribute your misshapen eggs to the use of buckwheat and the absence of the necessary material for forming shell. If you were to examine the eggs as soon as they were laid you would find they are semi-soft, having, instead of a hard shell, only here and there a small knob of chalky substance, not sufficient in quantity to order shape; you would also find the outside barked from exposure to the air, and that it became crusted and uneven during the process. The main quality of buckwheat is oil. Oats and barley give flour from the kernel, whilst the hull contains chalk. Feed on barley and ground oats, varied at times with a little whole maize, and let some baskets of bricklayers' rubbish be put where the birds can have access to it.

SHELL-LESS EGGS (E. M. P.).—Quackery in the present day is doing much harm to poultry. Stimulating and artificial foods are destroying constitutions, and bringing in new diseases. We should like to hear of what your wholesome food consists. There is something radically wrong when pullets laying in December get leg-weakness, or, in common language, become so weak they are unable to walk. We have some hundreds of pullets, but know nothing of leg-weakness. With regard to shell-less eggs, we advise you to read the answer to the preceding question. Your case is the worse, inasmuch as your eggs have no shell at all. Your feeding must be altogether wrong. Feed as we have advised above, and add thereto some road grit. Avoid oily, stimulating, and artificial foods. A wooden floor is an abomination in a poultry house, and often produces cramp. The floor should always be earth.

FOWLS MOULTING, AND FOR EXHIBITION (A. S. H.).—You do not tell us the breed of the bird you wish to prepare for exhibition. As the treatment is not alike in all cases, you must give us more information before we can answer. Moulting birds should be kept at night in a house free from draught, but not artificially warmed. Their food should be nourishing, but by no means heating. We prefer ground oats to any other food for moulting fowls, and in hard weather we mix it with milk. Anything heating or exciting perishes the young feathers. One of the principal points of Spangled Hamburgs is in both sexes the comb, which should be firmly seated on the head, and quite straight. It should be piked behind, and the pike should turn up. It should have no hollow, and must neither be loose nor crooked. Both should have blue legs with four toes, clear tails, mottled at the tips of sickles, and straight feather. Both should have spangled breasts, and the hens striped hackles. Both must have faultless white deaf ears of moderate size. Both should have barred wings.

BARROW-IN-FURNESS POULTRY SHOW.—Mrs. Cross informs us that she took a second prize with *Crève-Cœur* in Class 14, instead of being "highly commended" in Class 15 (Black Red Game Bantams), as stated. A prize card is often affixed to the wrong pen, but this does not entitle it to a prize. The judge can only decide which was correct.

PADENTAGE OF FOWLS (W. B. H.).—Your chickens, bred from a Wright's Brahma cock and a Gwyddr Brahma hen, would not be entitled to be stated as "the strain" of either, but a cross between the two.

BABE'S EYE-CERE RED (F. Y.).—Age will probably partly accomplish that which you desire. Condition will do the rest. No bird alters through age more than a Barb.

VARIOUS (Flying Tumbler).—Brent's "Pigeon Book" and Brent's "Canaries and British Finches" contain much that has been published in our columns. There are many communications on Flying Tumblers and Canaries in our three last volumes. There are no "Transactions" such as you name.

DRESSING A CANARY FOR EXHIBITION (Amateur Exhibitor).—There are several ways of getting over your little difficulty; but you must first sink your conscience, after which all will be plain sailing. If your Cinnamon bird be a good colour, you can pull out the two white feathers from his tail and enter him in a Clear class. You need not fear detection or exposure as things go now-a-days. By putting a prohibitory price on it you will be sure to have the bird returned to you, and no one will suspect you. If you wish it to be sold, you can put a low figure on it; and to hide your delicate bandwork as long as possible you may, in this case, simply cut the feathers close to the stump, so that the purchaser will not discover the little trick till the bird moults, by which time you can be *non est* with his money. If you think there is any fear of the judge taking such a liberty with the property of the British subject as to count the tail feathers, you can either insert two Cinnamon feathers, securing the joints with Derby cement, or you can dye the two white feathers with Derby ointment. You may enter on this course boldly. It is not unusual, and is very successful. It may be as well, however, to make friends with the judge, for if he be not on your side he will slate you to a certainty. Could you not give him an interest in your bird? If you both sail in the same boat he will be sure to try to screen his own complicity in the fraud. If the worst comes to the worst, and you should be discovered, why, you can get him to offer to affirm on oath that he knows you bought it. It will be convenient, however, to forget the name of the person who sold it. Never mind how much dirt sticks to you, you will pull through! If you don't like either of these plans, enter the bird in the "Any Variety of Cinnamon" class, where, from your description, he has not a ghost of a chance to win. But try!—W. A. BLAKSTON.

PARROT UNWELL (G. N. B.).—Your Parrot, drinking but not eating, is suffering from a very severe cold, and we advise you to cover over half its cage

and keep it near the fire. In addition to its ordinary seed give it some sponge cake dipped in sherry, also some warm bread and milk, and rice boiled in milk sweetened with sugar. Keep the bird's strength up with any nourishing food, such as sago or tapioca pudding, and leave the rest to nature.

METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.						Rain.
	Baromet- er at Sea Level.	Hygromet- er.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1873.	Inches.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	In.		
Jan.	.089	33.4	2.4	S.E.	36.2	35.5	31.1	40.8	28.2	—	
Feb.	29.95	34.8	32.8	E.	36.9	35.6	31.9	37.7	29.3	—	
Th. 30	1 .060	35.7	34.1	N.E.	36.8	36.5	33.8	37.1	33.1	.020	
Fri. 31	29.91	31.4	30.8	E.	36.1	34.0	31.4	33.1	30.8	.040	
Sat. 1	30.01	29.0	29.8	N.E.	36.0	33.1	26.5	35.4	26.8	.610	
Sun. 2	29.918	33.5	31.9	N.W.	36.2	33.9	29.0	38.9	26.8	.040	
Mo. 3	29.930	35.4	35.0	N.W.	36.3	37.6	32.0	43.0	31.2	.030	
Tu. 4	29.938										
Means	29.887	33.3	32.3		36.4	35.2	30.3	41.9	29.5	.747	

REMARKS.

- 29th.—The morning exceedingly dark, though not foggy; the day rather frosty, and scarce any sun.
30th.—Not quite so cold or so dark as the previous morning, but darkened soon after 8.30 a.m., and so continued all day.
31st.—A dull though dry day; frosty in the morning, but warmer at night; a few flakes of snow at noon.
Feb. 1st.—Dull morning, sleet about 10 a.m., then beautifully fine for a short time; sleet again in afternoon and evening, and very cold.
2nd.—Snow in the night, and snowing nearly all day, at times heavily, but chiefly sleet like snow.
3rd.—More snow in the night; dull morning, the snow continuing on the ground all day without thawing; a little fresh snow fell about 9 p.m., wind rather high at midnight.
4th.—Snow still on the ground, but soon began to thaw, slightly at first, but more and more rapidly; a little rain about 5 p.m.
Temperature low and uniform. Unusually deep snow (for London) between Saturday and Monday, lying on an average 7 inches deep, and yielding 0.65 inch as its equivalent of water; it was therefore of such a density that 10.8 inch would equal 1 inch of rain.—G. J. SYMONS.

COVENT GARDEN MARKET.—FEBRUARY 5.

We are still without much improvement in any branch of business; prices are nearly stationary, and the supply of hothouse and out-door produce is sufficient. Very few English Apples or Pears are to be had, the latter consisting of *Beurre Rance* and *Ne Plus Meuris*. French Pears consist of *Easter Beurre* and baking sorts. The Apple trade is confined almost exclusively to Canadian and United States varieties.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	sieve	3	0 10 0	Mulberries.....	1	doz.	0	0 0 0
Apricots.....	doz.	0	0	0	Nectarines.....	1	doz.	0	0 0 0
Cherries.....	per lb.	0	0	0	Oranges.....	1	100	4	0 10 0
Chesnuts.....	bushel	12	0	20	Peaches.....	doz.	4	0	0 0 0
Currants.....	1 sieve	0	0	0	Pears, kitchen.....	doz.	1	0	8 0
Black.....	do.	0	0	0	dessert.....	doz.	8	0	13 0
Figs.....	doz.	0	0	0	Pine Apples.....	lb.	5	0	8 0
Filberts.....	lb.	1	0	6	Plums.....	1 sieve	0	0	0 0
Cobnuts.....	lb.	1	2	0	Quinces.....	doz.	0	0	0 0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0 0
Grapes, hothouse.....	lb.	4	0	10 0	Strawberries.....	1	lb.	0	0 0 0
Lemons.....	1	100	0	10 0	Walnuts.....	bushel	15	0	8 0
Melons.....	each	1	6	8 0	ditto.....	1	100	2	0 2 0

VEGETABLES.

		s.	d.	s.	d.			s.	d.	s.	d.
Articokes.....	doz.	3	6	0	6	Mushrooms.....	pottle	1	0	2	0
Asparagus.....	1	100	5	0	10	0	Mustard & Cress.....	punnet	0	2	0
Beans, Kidney.....	1	100	2	0	3	0	Onions.....	1	100	2	4
Broad.....	bushel	0	0	0	0	0	Pickling.....	quart	0	8	0
Beet, Red.....	doz.	1	0	3	0	0	Parsley per doz. bunches	2	0	3	0
Broccoli.....	bundle	0	9	1	6	0	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	1	6	0	Peas.....	quart	0	0	0
Capsicums.....	1	100	2	0	3	0	Potatoes.....	bushel	4	0	7
Carrots.....	bunch	0	6	0	0	0	Kidney.....	do.	0	0	0
Cauliflower.....	doz.	2	0	4	0	0	Road.....	do.	0	0	0
Celery.....	bundle	1	6	2	0	0	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	6	4	0	0	Rhubarb.....	bundle	1	0	2
Cucumbers.....	each	2	0	4	0	0	Salsafy.....	1	bundle	1	0
Cybing.....	lb.	1	0	0	0	0	Savoy.....	doz.	1	0	2
Endive.....	doz.	2	0	0	0	0	Scorzenera.....	1	bundle	1	0
Fennel.....	bunch	0	3	0	0	0	Sea-kale.....	basket	1	0	2
Garlic.....	lb.	0	6	0	0	0	Shallots.....	lb.	0	3	0
Herbs.....	bunch	0	3	0	0	0	Spinach.....	bushel	3	6	5
Horseradish.....	bundle	3	0	4	0	0	Tomatoes.....	doz.	1	0	2
Leeks.....	bunch	0	3	0	0	0	Turnips.....	bunch	0	3	0
Lettuce.....	doz	1	0	2	0	0	Vegetable Marrows.....	doz.	0	0	0

POULTRY MARKET.—FEBRUARY 5.

THERE is a tendency to a rise in prices. This is always the case in cold weather, and is somewhat influenced also by the ending of the Game season.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	4	0	4	6	Pheasants.....	0	0	0	0 0
Smaller ditto.....	3	6	4	6	Partridges.....	0	0	0	0 0
Chickens.....	2	6	3	0	Hares.....	0	0	0	0 0
Geese.....	7	0	8	0	Rabbits.....	1	4	1	5
Guinea Fowls.....	3	0	3	6	Wild ditto.....	0	9	0	10
Ducks.....	2	0	2	6	Pigeons.....	1	0	1	2

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 13—19, 1873.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.		
13	TH	Twilight ends 6.17 P.M. ST. VALENTINE'S DAY. John Phillips died, 1708. SEXAGESIMA.	44.3	29.6	36.9	14	20	47	9	45	11	6	12	8
14	F		45.6	30.9	39.3	15	18	7	11	5	21	7	27	8	17
15	S	SEXAGESIMA.	47.0	31.3	39.2	17	16	7	13	5	30	8	40	8
16	SUN		47.0	30.6	38.8	11	14	7	15	5	4	J	8	19	14
17	M	Day breaks 5.57 A.M.	46.6	30.6	38.6	17	12	7	17	5	52	10	5	9
18	TU		45.2	31.1	38.2	17	10	7	19	5	morn.	19	9	21	14
19	W		44.9	31.0	37.9	15	8	7	20	5	6	0	36	9

From observations taken near London during forty-three years, the average day temperature of the week is 45.8°; and its night temperature 30.7°. The greatest heat was 67°, on the 16th, 1867; and the lowest cold zero, on the 13th, 1855. The greatest fall of rain was 0.50 inch.

HERBACEOUS PÆONIES.



INSTINCT and beautiful are Pæonies for the decoration of borders and shrubberies, where their large and variously-coloured blooms have an extremely ornamental appearance during the summer months. No other class of herbaceous plants can vie with them for rich and gorgeous effect during May and June. They are admirably adapted for the front of shrubberies, and are equally in place in flower borders—in fact, no garden can

be considered complete without its herbaceous Pæonies. Being of free growth, they are equally at home in the open parts of woodland scenes; no flowers that I know are so effective in the midst of otherwise monotonous green. Not that these plants will grow anywhere, but in many spots now devoid of colour a few Pæonies dotted about in available spots would lend a charm to our woodland scenes these do not at present possess. The available spots are those which are open, and free from the drip and shade of trees—in fact, these plants should have a sunny position, but will thrive well if not in the dense gloom of overhanging trees, for they must have light. As regards soil they are not particular, only they will not grow in a bog, and if water do not lodge they will grow either in the strongest or the lightest kind of soil. In a soil that grows the Foxglove and Harebell there they will luxuriate, delighting in the vegetable matter to be found in most of our woodlands abounding in suitable places to plant them in; and then

"There might ye see the Pæony spread wide."—Cowper.

Attractive as the Pæony flower is, it is often found better, and generally quite as well, represented in our cottage gardens as in those of greater pretensions. This is rather to be wondered at, as the race for a number of years, and until recently, has been all for those plants affording gorgeous brilliant display; and how the Pæony came to be overlooked is a matter of surprise, possessing, as it does, a dignity which forbids a rival amongst Nature's gayest ornaments in the early summer months. It is one of the most attractive and gorgeous of herbaceous plants, and, it must be added, one of the most neglected. The Pæony, in the emblematic language of flowers, is given as the representative of bashful shame. Is it shame that causes our placing this gorgeous noble plant in shrubberies and out-of-the-way corners to blush and bloom uncared for and unseen? Shame we should so treat a subject with which no other can compare for effect in its season of bloom. In our rustic gardens it may be seen unfolding in the bright clear sunbeams its beauties of the purest white, deepening to blush, rose, and up to the glowing, intense, and brilliant crimson. In brilliancy of colour, in largeness of bloom, combined with a form that, for globularity, with substance of petal, it cannot fail to please the most fastidious of florists. What? the Pæony a florists' flower! Why not? Why should not the Royal Horticultural Society include it in its May or June Shows, or both, giving a prize worth competing for

to be awarded to the best twelve Anemone-flowered, and another to the best twelve globular-flowered Pæonies? Are they not worth it?

As before remarked, Pæonies are at home almost everywhere, but they do best in a rich, light, loamy soil free of stagnant water, and delight in a good depth of soil full of fibre or decaying vegetable matter: hence leaf soil or well-decayed manure should be liberally, deeply, and well mixed with the soil before planting, and top-dressings of one or both given every autumn. Being of large growth, the plants should be allowed plenty of room; 4 feet apart should be the minimum distance, and between them in summer may be planted Dahlias. We may thus have early in summer and again late in the year flowers of the two most gorgeous of herbaceous plants. The situation should be open, but it is desirable it should be sheltered from the north. Liquid manure may be given after they "button," and if the weather be dry, liberal supplies of it and water should be given, as the Pæony, being of the Crowfoot (*Ranunculaceæ*) order, it is impatient of drought. If the weather be wet, the flowers, if for exhibition, should be protected by an awning of canvas stretched tightly on a lathwood frame having a sharp pitch or incline. Slugs are sometimes troublesome; these must be kept under by dusting about and over the crown with quicklime in the evening or early in the morning.

In planting in shrubberies a good hole should be made, and the soil well enriched with leaf soil, manure, pieces of turf, or vegetable refuse of any kind. Mix these well with the soil, and raise the latter in the form of a mound rather than of a hole, only filled so partially that it sinks into a hollow. Plant in autumn, or spring before growth takes place, and only just cover the buds—not more than 2 or 3 inches. Mulch over the spot with partially-decayed leaves, short litter, or lawn mowings, and keep the grass and weeds under, so that they do not overtop the plant in summer, mulching round them in summer with an inch thick of lawn mowings, and putting on a fresh mulching two or three times in the course of a season; they will soon become fine clumps.

Propagation is effected by division whilst the plants are at rest. It is, however, perhaps, best done in spring just before they begin to grow, taking off every bud with a portion of root, and planting it in rich light soil.

As far as I know, only one species of the Pæony is claimed by England—viz., *P. corallina*. What we for the most part cultivate, and amongst which we have the finest varieties, are the *P. albiflora* from Siberia or Northern China, *P. officinalis* of Switzerland and the Alps, *P. paradoxa* of the Levant, and *P. tenuifolia* of Siberian origin. From them have been raised the following and other varieties, which may be classed as the Anemone-flowered and the Globular.

ANEMONE-FLOWERED.

Anemoneflora carneo-tincta.—Guard petals rose, feathered in the centre with bright rose; centre petals bright blush, tipped with white. Very sweet-scented.

Carnea maxima.—Guard petals flesh; inner petals fringed, of a primrose colour.

Auguste Van Geert.—Guard petals purplish rose; centre petals rosy pink, interspersed with pale pink and white petals.

Alba superba.—White, shaded with pale pink; centre petals straw-coloured. Very sweet-scented.

Amabilis plenissima.—Guard petals flesh pink, surrounded with white; centre petals quilled, of a light primrose colour. Very sweet-scented.

Madame Margottin.—Guard petals rosy pink, with purplish marblings; centre petals flesh pink, tipped with a softer shade of the same colour. Very sweet-scented.

Prince Charles.—Guard petals pale rosy purple; centre petals primrose. The flowers of this are small.

Pulcherrima.—Guard petals white, tinged with primrose; centre petals almost white.

Mrs. Hartnell.—Guard petals rose pink; centre petals of the same colour, interspersed with white petals. Rose-scented.

Jeanne d'Arc.—Guard petals pink, surrounded with white; centre white or cream, some of the petals streaked with carmine. Very sweet-scented.

Eclatante.—Guard petals rose, with a carmine tint; centre petals same, tipped with white. Very sweet-scented.

Lilacina.—Guard petals rosy lilac, tipped with pink; centre petals rosy lilac, tipped with pale pink, interspersed with lilac and white petals. Rose-scented.

LOBULAR-FLOWERED.

Candidissima.—Very double and globular; reflexed outer petals white, centre pale straw.

La Sublime.—Base of the petals tipped and margined white.

Atrosanguinea.—Purplish crimson.

Amarantescentis sphaerica.—Crimson lake, veined and striped crimson. Very sweet-scented.

Centifolia rosea.—Delicate pink, tipped and edged with white. Sweet-scented.

Charles Binder.—Purplish rose, some of the petals tipped and edged light pink. Sweet-scented.

Léonie.—Flesh pink; tips of petals white; some tipped and margined soft rose.

Festiva maxima.—White, with creamy yellow shading; a few of the centre petals splashed and striped crimson.

Gloire de Douai.—Purplish crimson.

Amabilis superba.—Rosy pink, interspersed with creamy-white petals.

Prince Prosper.—Crimson lake.

The Queen.—Creamy white; base of the petals primrose, tipped with white.—G. ABBEY.

ROYAL HORTICULTURAL SOCIETY.

ANNUAL GENERAL MEETING.

FEBRUARY 11TH.

THE Annual General Meeting of the Royal Horticultural Society was held on Tuesday in the Council-room, South Kensington. Lord Henry G. Lennox, M.P., in the chair.

THE ASSISTANT SECRETARY (Mr. Richards) read the Minutes of last Annual Meeting, which were approved.

MESSRS. FORTUNE and MOORE were appointed Scrutineers of the ballot.

THE ASSISTANT SECRETARY then read the

REPORT OF THE COUNCIL TO THE ANNUAL GENERAL MEETING.

1. THE number of Fellows is now so great—viz., 3572, and the motives which have induced them to join the Society are so different, and in some respects contradictory, that it has been difficult to conduct its affairs so as to satisfy all parties. Regard for science, love for flowers and flower shows, social motives, the convenience of using the Garden at South Kensington, and the International Exhibition privileges, have each had a share in attracting Fellows into the Society, and it is plain that some of these objects must necessarily be antagonistic to each other. The Council have always endeavoured to adjust them, or to hold an even balance between them, as far as possible studying in every case to consult the wishes of the majority, without losing sight of the special objects for which the Society was founded and exists; but they have to acknowledge that this has sometimes proved beyond their power. The great difficulty which they have latterly had to encounter has been to reconcile the incompatible desires of those who value the International Exhibitions, and of those who prefer the comparative privacy and quiet of the Gardens. It is impossible to satisfy both, and the attempt of the Council in former years to take a middle course proved, as usually happens in such cases, perfectly satisfactory to neither. Last year they followed a more decided course, and

accepting the International Exhibition as an accomplished fact, they thought it for the interest of the Society that the two establishments should work harmoniously together, and accordingly entered into the arrangements with the Commissioners with which the Fellows are familiar, by which each Fellow obtained free access to the Exhibition as well as to the Gardens. This, like the arrangement of the previous year, has proved successful financially, and the Council believe that, on the whole, it has given satisfaction to the majority, although they are aware that a valued portion of the Fellows would have preferred to have the Garden and Society kept distinct from the Exhibition. The Council, looking to the position of matters and the necessity of circumstances, are satisfied that their policy in this respect was wise and ought to be persisted in. They accordingly have done their best to make arrangements with Her Majesty's Commissioners for the present year, and they are now engaged in a negotiation which they hope to bring to a successful issue in time for this year's working.

2. THE Provincial Show at Birmingham last summer proved an unqualified success, notwithstanding that the weather was as unpropitious as ever marred the splendour and success of the Shows at Chiswick. The net proceeds left to the credit of the Society a sum of £1040, after handing over to the local establishment a similar sum as their well-deserved share of the amount realised. It has been decided to hold next year's Show at Bath, from which the Council receive every assurance that a satisfactory result will be attained.

3. FOR the details of last year's receipts and expenditure the Council refer to the accounts annexed, nothing in them appearing to invite special comment on the part of the Council.

4. THE style in which the Gardens both at South Kensington and Chiswick have been maintained, and the manner in which the functions of the various Committees and the duties of the officers of the Society have been performed, has, it is trusted, been such as to merit the approval of the Society, as they have that of the Council.

5. THE Council append the Report from the Horticultural Directors (see page 138) and the Professor of Botany.

THE CHAIRMAN.—In order to give an opportunity to any Fellow to express his opinion, I will now move that the Report be adopted.

MR. W. WILSON SAUNDERS.—Allow me to second the motion, and to bring before the Meeting the fact that an important document has been placed in the hands of the Chairman, which will be read to you.

THE CHAIRMAN.—I wish to state that the Council of the Society has this morning received a most important letter from the Commissioners of the Exhibition of 1881, which deals with all the questions hitherto debated or discussed between those two bodies; and I am sure the Fellows will feel it was impossible for us, having only received the letter this morning, to give matured advice as to receiving it as a whole or a part of any business for the future; but, on the contrary, we wish to take the Fellows further into our confidence [hear, hear]. I will ask the Assistant Secretary to read the letter, and I hope the Fellows will be tender upon a document which shows great consideration for our Society, and concerning which the Council has not as yet had time to have the details.

THE ASSISTANT SECRETARY read the letter, as follows:—

5, Kensington Gore, February 8th, 1873.

SIR,—Having communicated to the Committee of Management of Her Majesty's Commissioners the results of the lengthened consideration which has been given by the Council of the Royal Horticultural Society to the means of bringing about a closer union of the interests of the Commissioners and the Society, I am now directed by the Committee of Management to submit for the consideration of the Council the following propositions:—

1. THE Society to admit to the portions of the estate leased to them, and to the Flower Shows at Kensington, all the visitors to the Exhibition, excepting on Sundays, and the Commissioners to have the use of the arcades for exhibition purposes, as in 1872, but arrangements to be made, when necessary, to accommodate the Society's Shows in the arcades.

2. THE Fellows of the Society now on the books to be entitled to one non-transferable ticket of admission to the Exhibition and Gardens for each guinea that they pay to the Society. Life Fellows now on the books to have corresponding privileges. Debenture-holders to have one season ticket for the Exhibition.

3. THE annual subscription to the Society and for Exhibition season tickets to be the same, and only to be altered by mutual consent.

4. THE receipts from the Exhibition and Gardens on every Wednesday during the Exhibition to be equally divided between the Commissioners and the Society. On the other days of the week the receipts from the Exhibition and Gardens to be the property of the Commissioners.

5. THE Commissioners to undertake the efficient and proper maintenance of the conservatory and gardens at Kensington, and bear the cost of repairs, rates, and taxes of the whole of the buildings and grounds leased by the Commissioners to the Society.

6. THE Society to pay to the Commissioners one-half of the total sum received by it for yearly-paying Fellows' tickets, and the Commissioners to pay to the Society one-half of their total receipts for season tickets, so long as the total amount received by the Commissioners on account of Exhibition season tickets does not exceed £4000. Beyond this all the subscriptions received by the Commissioners for season tickets to be the property of the Commissioners.

7. THE Commissioners to pay to the Society annually the sum of £4400, of which £2000 is to be appropriated to the formation of an accumulating redemption fund, for the extinction of the debenture debt, and the remainder

towards the payment to the Commissioners of the rental reserved to them under the lease to the Society.

8. In settling the annual accounts of the Society, the Society shall not be charged with the one-fifteenth part of the existing life compositions.

9. No more life members to be accepted during the continuance of this agreement.

10. These arrangements to be for the whole term of the Society's lease, but to be determinable by the Commissioners at twelve months' notice.

I have the honour to be, Sir, your obedient servant,
HENRY Y. D. SCOTT, Maj.-Gen.,
Secretary.

JAMES RICHARDS, Esq.,
Assist. Secretary, Royal Hort. Society.

A FELLOW asked whether forty-guinea members were only to have one admission.

THE ASSISTANT SECRETARY.—No. Four.

Sir ALFRED SLADE said he believed he should be in order in making a few remarks upon the motion that the Report be adopted, and also upon the important letter just read to the Meeting. He believed the opinion he was about to express represented not only his own, but that of a very large proportion of the Fellows who resided in that neighbourhood, and of the residents in the neighbourhood, with respect to annual exhibitions. There had been a growing feeling of dissatisfaction amongst the Fellows in that neighbourhood, seeing that their privileges had been gradually invaded and handed over to others [cheers], and also a growing dissatisfaction at seeing the privileges they thought they would enjoy in these Gardens being enjoyed by others [hear, hear]; and that feeling would be intensified when they found that if the present proposals were acceded to, so far from these Gardens being an advantage to the neighbourhood, they would become exactly the opposite [cheers]. It would drive people away, and not only the Fellows but those who had property in the neighbourhood would find it much deteriorated [hear, hear]. Last year complaint was made that the arcades which were intended for the use of the Fellows were shut against them, and could not be entered without making an express payment. They had been deprived from time to time of different exits to the Gardens; and it had also been complained of that large parties of excursionists who had come to the Exhibition were allowed to go into the private Gardens of the Horticultural Society without making adequate payment. But all these causes of complaint were about to be increased tenfold by the proposition before the Meeting [cheers]. He should now discuss the letter of the Commissioners. He noticed in the letter it was stated that the writer had communicated "the results of the lengthened consideration which has been given by the Council of the Royal Horticultural Society to the means of bringing about a closer union of the interests of the Commissioners and the Society." Now, he (Sir A. Slade), contended that it was impossible then to discuss the letter properly unless they had before them the correspondence on the part of the Royal Horticultural Society [cheers]. It was proposed to admit to the Gardens and to all the flower shows the visitors to the Exhibition; but that would bring such a mob to the Gardens that no person would go into them who wished not to be crushed [hear, hear]. Next, the Commissioners were to have the use of the arcades, and that was a point he should strongly object to [hear, hear]. With regard to the financial proposals, the letter said that the Society was to receive £1000 [There was a typographical error in the letter referred to], or half the total receipts of the Commissioners' season tickets. Unless they were told what that was they might really give much more than the £1000 in order to receive so much [hear, hear]. By the last clause no power was given to the Society to terminate the arrangements. That was a sound bargain [a laugh]. The Commissioners might dictate to them, and at the end of the annual bargain turn them out of the Gardens. But they would never do so. They could never cover these Gardens, and that being so, he did not think they could find more desirable tenants; but the day they did turn them out they would sign the death-warrant of these international Exhibitions altogether [hear, and cheers], because he believed there was a very widespread feeling amongst the trading community against what they considered was an unfair competition [hear, hear]. If the Commissioners, in addition to opposing the trading interests of the community, opposed the wishes of all the respectable inhabitants of the neighbourhood, that day they would sign the death-warrant of the annual Exhibitions at Kensington [cheers]. He should now move this resolution or amendment—"That this Meeting looks to the Council to protect the Fellows in the exercise of their rights and privileges, especially in the use of all the arcades and the conservatory as part of the Gardens; to exclude the public from the Gardens except upon an adequate payment; to obtain for the Fellows the use of all the entrances and exits; and the Meeting is further of opinion that the Gardens should be opened at an earlier, and closed at a later hour than at present."

Mr. POWNALL, upon a question of order, said that this letter had only been received by the Council that morning: were they to receive it as part of the Report? because it appeared to him that these were two distinct things.

The CHAIRMAN said Mr. Pownall was quite right. The Report

was an emanation from the Council, but the letter of the Commissioners was still under their consideration.

Sir CHARLES DAUBENEY observed that the writer of the letter stated that which showed that correspondence had been going forward between the two bodies. The letter had been read to the Meeting, and he thought he was right in saying, that as a part of the Report it had been read to the Meeting [no, and hear], although the Council had not made up its mind as to the details. Still they saw by the first part of the letter that correspondence had been going on, and therefore it was that he looked upon this letter as the answer of Her Majesty's Commissioners to the propositions of the Council; and so far, then, he maintained they were in order in considering this very important letter, because if they did not do so he could not see how they could have any voice in the matter. It was, he thought, advisable to consider the letter, because they were all anxious that the Council should be in possession of the feelings of a very large majority, not only upon what had happened in that room, but upon what was now before them. He fully agreed with Sir Alfred Slade that the Fellows had been unfairly treated [hear, hear]. They had not subscribed originally to the Gardens or entered into them with the idea of being so overwhelmed with an enormous number of people. They had an idea it was to be a place of recreation, but not for the entire public—for all those who came to see the Exhibition [hear, hear]. He thought he might make some remarks as to the conduct of some of those who were admitted last year. By one of the rules Fellows were not allowed to smoke. He pleaded guilty to smoking [laughter], but he had never lighted a cigar in the Gardens—first, because it was contrary to rule; and secondly, because in a place like that, smoking was not only an inconvenience, but an act of great disrespect to the ladies and others, who would find themselves, perhaps, under the trees with a fellow smoking, not good but abominable tobacco [laughter]. But only last Saturday two ladies had smoke puffed into their faces. If he smoked, he should have a man after him; but how was it that the rules were not enforced, that persons were in the Gardens smoking, eating sandwiches, and turning the place into —

A MEMBER.—A tea garden [laughter].

Sir C. DAUBENEY went on to say that the way in which these people conducted themselves had become an intolerable nuisance, and it was the business of that Meeting to protest against a repetition of such conduct [hear, hear]. Now, he found by this document that the Society was to allow all visitors to the Exhibition admission to the Gardens. As it was, the crowd at the flower shows was so vast that at two in the afternoon it was quite impossible to pass along the Gardens. But how would it be when all the visitors to the Exhibition were allowed to go in? It would result in this, that the Fellows would have to give way to the mob, and the families of the Fellows would be deprived of the enjoyment of that for which they had paid [hear, hear]. The last clause of the proposals, making the lease determinable at the wish of the Commissioners, was most objectionable. By the clause they were handing themselves over to the Commissioners of Her Majesty's Exhibition bound hand and foot [cheers]. They could not prevent the Commissioners doing anything they liked, and, as Sir Alfred Slade remarked, there was not the slightest power given to the Council of the Society to put any termination to the lease themselves. The whole matter would be in the hands of the Commissioners. He thought that the most objectionable clause which could be worded. He had much pleasure in seconding Sir Alfred Slade's amendment, and hoped to see it carried by the meeting in justice to themselves [cheers].

Mr. S. H. GODSON congratulated the mover and seconder of the amendment, upon the able expositions they had given of the existing state of things. What was the position of the Society now? At the last meeting there was a sum of £700 which was disallowed by the Expenses Committee, and yet not a word of explanation was given by any member of the Committee as to how it had been charged. But how did they throw dust in the eyes of Fellows? By putting the item into the capital account, which was neither business-like nor creditable [hear, hear]. Then there was no account to show what the liabilities were, nor was there any account to show what was due to them, so that they might take it for granted that they were indebted £931, and that they had to pay the Commissioners £1200. He doubted very much whether the Council had gone into the question of the agreement and charter. If they had, they would have found that for the first five years they were to pay no rent, and that for the next five years they were to pay a sum equivalent to £2145. They had gone back to the position in which they stood in 1855, and it was of vast importance that something should be done. He pointed out that under the charter there was a ready means provided for settling all disputes. It was his intention to have moved a resolution to the effect that the Report of the Council should be referred to a Committee of three Fellows, with power to add to their number, and that they should ascertain the general state of the Society, and report to

the next General Meeting. He did think that after the receipt of the letter something to that effect should be done. They should recollect they were fighting the President and the Council [time, and question]. Mr. Godson was speaking next of some of the Members of Council, and

Mr. POWNALL rose to a point of order, and said the question before them was that of the Report, and the letter which had been read [hear, hear].

Mr. Godson said they could not now discuss both, but to follow out the observations he was making he might say that at the last Meeting he showed that the gentlemen who were re-elected at one meeting were turned out the next—just like bull-playing—one went out and the other went in [cries of "time"]. Did Lord Lonsborough ever attend a meeting?

The CHAIRMAN.—I am very sorry to interfere with Mr. Godson, with whom I have had several passages in this room; but there are gentlemen here who have brought forward matters with extreme ability, intelligence, and moderation, and although we are willing to wait until five o'clock to hear Mr. Godson's strictures upon our personal wants, it is not fair to those gentlemen who came down at a sacrifice of their time to hear a discussion upon their moderate proposals [cries of hear, hear]. Let Mr. Godson reserve his strictures until the end of the Meeting, and we will sit here and fight the battle out with him [hear, and laughter].

Mr. GODSON said that was not quite fair. He expected, as an Englishman, fair play. He did not come there to ask a favour, but simply stood upon his right. He would ask whether £100,000 was or was not in their property? They had paid that for it, and were the gardens to produce nothing? By the charter the centre arcade, and the conservatory, and the arcades on each side all belonged to the Society, and he would ask any gentleman whether, after paying £100,000, the Council had not been hardly dealt with, and whether the Council were not dealing hardly with the Fellows? That probably was the last time he would come there, for practically the whole business was in the hands of the Council.

Mr. CLARSON submitted that the only question before the Meeting was the adoption of the Report. It would be exceedingly inconvenient to deal with the Report and the letter together.

The CHAIRMAN.—I quite agree with you, but I had a disinclination to stop anyone. I wished to go into the question of the Report, and that was the reason I interfered with Mr. Godson.

Mr. MONTAGUE rose, as a country member, to support the amendment, because as they had heard of the great inconvenience suffered by the town members by those visiting the Exhibition making use of the gardens, he wished to say it was also a very great inconvenience to country members when they came to London to find the Gardens flooded by persons who paid for admission to the Exhibition. He did not say these persons were not as good as themselves, but he thought it was very unfair to the Fellows, and was a reason why the amendment ought to be supported. The Report itself was not a satisfactory one. It dealt with certain categories of Fellows, and said that many joined through the love of flower shows. Well, he was sure these had a greater interest in horticulture than those who joined for the International Exhibition privileges. Then they were told in the Report that the Council had great difficulty in satisfying all parties, but they all knew it was exceedingly difficult to satisfy even two parties. Last year, during the flower shows, they were shut off from their own arcades, and their ladies had to go through the rain instead of through the arcades, which were erected so that ladies and delicate people might have shelter when proceeding to their carriages. He should not touch upon the letter because the Council had not had time to look into it, but he would say that under this proposal the Council would become almost the slaves of the Commissioners, because the latter were to undertake the duties of the Council, maintain the Gardens, execute the repairs, and pay the rates and taxes. The Council had got no hold over the Commissioners [hear, hear]. The Commissioners could do what they liked with the Gardens, and the Society would have no control as to the expenditure [hear, hear]. Some day they would find themselves shut out in the cold, and would have to go to their gardens at Chiswick. The Commissioners were to give the Society the half of what did not exceed £4000, and the Society was to give the Commissioners a sum of nearly £4000. They must not forget that these Commissioners are the Commissioners of the Exhibition of 1851, and therefore when it was alleged that it was strictly for the promotion of science, he might say he did not think horticultural science would be promoted by handing over the Gardens and their management to the Commissioners [hear, hear]. In conclusion he begged most cordially to support the amendment on the proposition that the Report be received [cheers].

Mr. HARRY VEITCH asked for some explanation as to a statement made by the Chairman at the last meeting as to the management of the Society as it existed in 1862.

Mr. SAUNDERS said he happened to have been Chairman upon that occasion, and should like to say a few words upon the amend-

ment. It began by stating that "this Meeting looks to the Council to protect the Fellows in their rights and privileges, and first to maintain the use of all the arcades and the conservatory as part of the Gardens." That was exactly the point touched upon by Mr. Veitch. The Council strongly felt last year that the arcades had been taken away from the Fellows, and that they should not submit to anything but the return of the arcades for themselves again; and the mind of the Council, he was sure, was still this, that the arcades and the conservatory should be reserved for the use of the Fellows. As he understood it, the proposition of the Commissioners was that the Fellows should have the arcades, but if the former wished to put up any article for exhibition—it might be horticulture—they might do so in the arcades; and there seemed no great objection to that. Then as to excluding the public from the Gardens except upon an adequate payment, they must all recollect that they admitted the public at all times on the payment of 1s., and sometimes for 6d.; and that when there were shows, in order to prevent a rush a high price of admission was put on. Then as to maintaining the use of all entrances and exits throughout the year, the difficulty was that the Commissioners having given them six-months' notice to give up the north-east and north-west entrances, they had only one entrance at present, and they must submit. However, there was a way to make another north-west entrance.

Sir C. DAUBENEY.—That is at the top of Queen's Gate!

Mr. SAUNDERS believed it was so. As to the Gardens being opened at an earlier and closed at a later hour, that was quite within the reach of the Council, so long as the alteration met the convenience of the Fellows at large. These were the points he wished to refer to, in order to show what the difficulties were respecting the amendment [hear, hear].

A member trusted that the northern entrance, which, for twelve months after the Exhibition, was used neither by the Society nor the Commissioners, would not, after the next Exhibition, be allowed to remain closed.

Dr. LYON PLAYFAIR, M.P., both as a member of the Society and one of the Exhibition Commissioners, felt certain that all Fellows of the Royal Horticultural Society were desirous of putting themselves in the position of perfectly honest people [a laugh], by trying to carry out, in the most complete way possible, the conditions of the lease they had entered into. They had entered into a lease, and they had engaged to pay £2400 per annum as the rent of the Gardens. They had been in operation for about twelve years, and they had only twice paid the rent they were bound to pay the Commissioners by the lease. Once it was paid in 1862, and once in 1871. These were the only two years in which the rent was paid, and in both cases it was paid through the Exhibition [hear, hear]. "Therefore," said the honourable and learned gentleman, "do not let us throw overboard the Exhibition as hostile to the interests of the Royal Horticultural Society." The consideration of the Commissioners, as landholders, was not to put an end to their lease; and the Society, on their part, must fulfil their obligations, and the only way they could do so was to make the Exhibition pay their obligations for them. If they looked at the matter a little more carefully they would see the interests of the two bodies were perfectly identical. He could assure them, as one of the Committee of Management of the Exhibition who had been in constant communication with the Council of this Society, that never did a body of gentlemen give more attention to the interests of the Fellows than the Council had. They had met the Commissioners in a spirit of fairness, but of the utmost jealousy as regarded the interests of the Fellows. He did not think the Meeting understood, as it was scarcely possible they could understand, the meaning of the letter, and he should therefore explain it in a few words. In the first place, part of their subscriptions were to be paid over to the Commissioners, and these would be always swallowed up in preserving the Gardens in an efficient state. On their side, the Commissioners would give the Society £4400, which would enable them to pay their rent, and also pay-off their debenture debt; and the effect would be that at the end of the lease the Fellows would have become honest men—have paid their rent, and paid their debenture debt, and have £20,000 profit in the bargain [oh! oh!]. But really they would find his statement exact and correct. Then in return for this the Commissioners asked the Society to give the visitors to the Exhibition access to the Gardens; and if all this had not been done in a spirit of fairness on both sides, then, indeed, both sides had been mutually mistaken. The Commissioners believed the interests of the two bodies were identical; they believed that the interests of the Commissioners were bound-up with those of the Horticultural Society; and that if the latter did not succeed, then one of the supports of the Commissioners was lost. Some of their interests might not have exactly coincided, but a most genuine spirit of fairness had existed, and the Council had to make arrangements mutually beneficial for both bodies. The Society was bankrupt, or would be but for this arrangement.

A FELLOW.—You made it bankrupt [loud cheers].

Dr. LYON PLAYFAIR.—Not I, because I am only a recently-appointed Commissioner. If they examined into the whole case and the circumstances surrounding it, they would find there was an identity of interests between the two bodies, and if that were not so, then had the negotiations failed. As to the Council, he was sure they had guarded the interests of the Fellows carefully, and he felt certain that at to-day's Meeting they could not get a body of men to serve them better. He thought it right to let the Meeting hear both sides of the question [loud cheers].

Mr. HARDCASTLE, M.P., said that as the honourable gentleman who had just spoken had alluded to the document placed that day in their hands, perhaps he should be permitted to state what he understood would be the effect of that document if its proposals were carried out [hear, hear]. Everyone who knew Dr. Playfair listened to him, when he spoke, with most anxious and respectful attention, because everyone acquainted with him knew he never talked nonsense [hear, hear]. He had hoped Dr. Playfair would have said a little more about the document. He told them they ought to have the greatest confidence in their Council, in fact that they ought to put their heads into—he was going to say—the mouths of the Council [laughter, oh! and hear]. But it did appear to him that Dr. Playfair's speech went to this—that they were to take what they got, and thank God for it, and not look to their own affairs in the smallest degree [cheers]. It was impossible for anyone to analyse this document carefully at a few minutes' notice; but the practical result of it would be that the Commissioners, whoever they might be, were to pay £2000, which was approximately the expenses of the Gardens at the present moment. Then they were to pay not more than £1000 over as a portion of the Exhibition season tickets, which made £3000. Then they were to pay something, on which Dr. Playfair somewhat enlarged—a sum of £4400. Now out of this £4400, a sum of £2000 was to go to some sinking fund, which would be of no advantage either to the Fellows or the Society, and that amount was to represent the rent, which, up to the present time, they had never paid [hear, hear]. The Commissioners were to pay us £4400, and the Society was to pay £2400—the receipts in the Gardens, and a sum of nearly £4000, being about half the annual subscriptions, and the consequence would be a loss to the Society of about £1000 a-year. That was his view, and if he was mistaken he should be happy to have himself set right. He should be glad to have the Gardens kept separated from the Exhibitions, for he looked upon these Exhibitions as the most unmixt nuisances ever invented [hear, no, and laughter]. Tradesmen looked upon them in the same light, and he believed the Exhibitions would drag their slow course along for a few years, and then die of inanition [hear, and a laugh]. Without pretending to the gift of prophecy, he looked forward to the entire loss of their arcades, and most of all to the loss of their liberty; and he most strongly protested against putting himself, as one of the Fellows of the Society, under the hands of the Commissioners. On these grounds he protested against the receipt and adoption of the Report [cheers].

Mr. BOHN said a great disposition existed to have a little more strength infused into the Council. They had more of the 1851 men than of really practical men; and as one of the old members of the Society he very strongly felt the object for which he associated himself with it had not been carried out, because, instead of having such Gardens as a horticultural society should have, they had these puppet-shows, which were every day getting worse. He now rose to move, that instead of Lord Alfred Churchill and Major Trevor Clarke, there should be elected as members of the Council the Rev. S. Reynolds Hole and Mr. B. S. Williams [cheers].

Mr. BATEMAN said no person could have any objection to either Mr. Hole or Mr. Williams, but the question was whether Lord A. Churchill would or would not be an acquisition to the Council. It was not against him that he was not a horticulturist, as he could assure the Meeting, after ten years' work at the Council, that if they were all horticulturists they could not get on with the work at all [laughter]. They had a specimen that day of the great variety of topics non-horticultural which pressed upon the attention of the Council. Lord A. Churchill was historically connected with horticulture, his brother the Duke of Marlborough and two former Dukes of Marlborough having been connected with plants [laughter]. As regarded Lord Londeshborough, he attended once, but he had also attended by proxy and sent up the most magnificent lot of Orchids ever seen [laughter, and cries of question].

The CHAIRMAN said he should now, after the explanations given by Dr. Playfair and his other colleagues, have remained silent if he had not thought he should be wanting in respect to the Meeting if he did not express his entire concurrence in the reports they had made. In the first place, he wished to do most ample justice to the tone and moderate manner in which the amendment had been brought forward. He considered the manner in which the amendment was introduced and seconded did credit to the general body of the Fellows of the Horticultural

Society [hear, hear]. It was most gratifying for the Council to be able in the same tone to say they were, as they always had been, anxious to steer the interests of the Fellows through a difficult and intricate channel. Here he might say, with reference to an allusion by a gentleman that exhibitions were declining, and that the power of the Commissioners to terminate the arrangements was a one-sided bargain, and that exhibitions might drag on their existence for only two years—surely there could be no great fear of the Commissioners putting an end to the lease if they could only earve for two years [laughter]. He was sorry to hear that some persons calling themselves "gentlemen" had the other day smoked in the faces of ladies. Now it was not necessary to point out that these "gentlemen" could have had nothing to do with the Exhibition, as it was closed in the month of September. He quite agreed that the privacy of the Gardens was not what it was before the establishment of the Exhibition; but at the same time it was certainly preferable that the Society should have carried on its work and redeemed its debts without having reference to the Commissioners of 1851; but it was in one of those positions in which finance arbitrarily stepped in and insisted upon us accepting conditions not so pleasant as they might have been if it were not for the pecuniary difficulties. He would only just point out that the Gardens had been only able to pay their rent for two years, and these were the two years of the Exhibitions. Taking up the amendment, his lordship said that, as regarded the first sentence—that the meeting looked to the Council to protect their rights and privileges—he begged to tell Sir Alfred Slade that the Council were entirely in accord with him on that point, and were most anxious to protect the rights and privileges of the Fellows. As to the exclusion of the public, at present there was a sixpenny day, but under a new resolution that would be done away with, and there would be no lower admission to the Gardens than 1s. Then, as regarded the use of all the entrances, Mr. Saunders had told them that all the entrances, except one, were not the property of the Society, and the only chance they had of getting other entrances was by acting cordially and on amicable terms, and trying to exercise their influence on the friendly spirit and courtesy of the Commissioners of 1851. As to the opening and closing of the Gardens, he was sure the object in view would have been accomplished long ago if any Fellow had made a private representation to the Council. Then, as to Mr. Bohn's remarks about increasing the practical element in the Council, and eliminating what he (the Chairman, called the "west-end" element; he could assure the Meeting that he had remained in the Council in consequence of repeated representations that he should not desert them in the midst of their difficulties; but he placed his seat at the Board at the disposal of any other gentleman who might be selected and be more worthy of their confidence [no]. In conclusion his lordship said he was ready to resign his seat, and that would enable them to place Lord Londeshborough and Lord A. Churchill, who said he was most anxious to take a practical part in the business, upon the Council.

Sir C. DAUBENEY wished to ask whether a special meeting would be called to acquaint the Fellows what they proposed to do upon the letter of the Commissioners [cheers].

Professor TENNANT remarked that the Zoological Society would be bankrupt if it did not give great privileges to the public. One-third of the income came from the ordinary sources, one-third from the 1s. admissions; but by far the largest third came from the sixpenny admissions.

Mr. CLUTTON wished to bring one view of the financial position before the Meeting. According to the letter the Council were to pay £4400—£2400 in the form of rent, and £2000 towards paying off the debenture debt. They were also to pay a further sum of £2000, or such sum as would be represented by half their annual admission tickets. That amounted to £6200, and then the Commissioners took upon themselves the maintenance, repairs, and rates and taxes of the Gardens, and that sum amounted to about £4200. The Society expended upon horticulture, including Chiswick, about £6000, and upon these Gardens a sum of about £1000, and it was that £4000 which the Royal Commissioners excluded from half the annual subscriptions, so that it might be assumed that they got from the annual subscriptions a sum equal to the maintenance of the gardens [hear, hear]. It was said that, supposing the arrangements to be carried out, the Society would be losers. He could assure the Meeting he had paid great attention to the subject, and he had no doubt that by means of the arrangement the Society would be in a better position by £1000 per annum than it was at the present time; and in addition to that, the Society would pay its rent of £2400 a-year, and also place £2000 a-year towards the redemption of the debenture debt. It should be recollected that the Society was in full enjoyment of the Gardens, and if it had not been for the Royal Commissioners they would not be in possession of them now under lease, because the lease would have lapsed by reason of the non-payment of rent, according to a provision in the lease. Were the gentlemen present prepared to give up these Gardens if they did not pay their rent?

Sir A. SLADE.—Yes [oh!].

Mr. CLUTTON.—Well, it is better to get half a loaf than no bread. You will never be able to keep up Chiswick without a loss.

Mr. BOHN.—I will explain that.

Mr. GODSON.—I deny it.

The Rev. C. P. PEACH wished to know whether the Meeting would be pledged, by adopting the Report, to receive the letter of the Commissioners, or whether the two things were not perfectly distinct? It was perfectly impossible to go through these ten propositions and debate them properly. He should move the adjournment of the debate in order to fix a time for taking these ten propositions into consideration, and also for revising the bye-laws, which had been put in decidedly contrary to the charter of the Society. He simply wished to know whether the acceptance of the Report tied them to accept the ten propositions of the Royal Commissioners?

The CHAIRMAN had tried to make it quite clear that the Meeting, in voting the Report, did not tie itself to accept the letter; even the Council themselves were not bound by it.

Mr. PEACH.—Then the adjournment of the Meeting can be moved afterwards?

The CHAIRMAN.—You can move anything you please.

Sir A. SLADE remarked that in the Report it was stated, respecting the Exhibition, that the Council "were satisfied that their policy was wise, and ought to be persisted in." Now, on behalf of himself and Sir Charles Daubeney, he asked the Meeting, in adopting the resolution, to express their opinion that the policy of the Council was not wise, and ought not to be persisted in [cheers].

Sir C. DAUBENEY.—I would ask you, my lord, whether there will be an opportunity for us to consider this letter of the Commissioners before the propositions in it are finally agreed to?

The CHAIRMAN said he should consult with his colleagues on the subject.

After a short consultation,

The CHAIRMAN said he had told the Meeting that the Council had not made up their minds upon the Commissioners' letter, and had they done so they would have given the Fellows an opportunity of saying "aye" or "no" to it. Viewing it from this point, the matter being of an exceptional nature, the Council thought it desirable and reasonable to call a special general meeting, to enable the Fellows to see whether they could agree with whatever conclusion the Council came to or not. In the event of the Meeting disapproving whatever arrangement the Council came to, the Council would resign in a body, and the Meeting would call together another governing body in their place. When he said the Council acceded to this, it was very important that the Meeting should accept the Report, considering that the amendment which Sir A. Slade had proposed was really and virtually agreed to by the Council in almost every one of the particulars, except that as to restoring the permanent entrances and exits, which were not the Council's to restore. Therefore, if the Meeting met the Council in this way, and accepted its Report, they might consider that no final agreement would be made between the Council and the Commissioners without a final general meeting [hear, hear]. He thought the Council might appeal to the Meeting whether the former were not acting in a spirit of conciliation, and were anxious to do everything they could to meet the Fellows firmly on the subject [hear, hear]. They would not have long to wait for the result, because the whole thing must be settled with the Commissioners within a week or ten days, and therefore the special general meeting will follow very quickly.

Mr. POWNALL asked whether, that being so, it would not be better to adjourn the Meeting until the Council had made up their minds as to what arrangements they proposed to make [hear, hear]? He begged to move that the Meeting do adjourn to that day fortnight.

The CHAIRMAN.—That is quite impossible, unless you wish to shut the door after the steed is stolen, because our answer must be given in a week.

Mr. POWNALL.—Surely the Commissioners might not press the Council under the circumstances to come to such a hasty decision without making the Fellows acquainted with it.

Dr. LYON PLAYFAIR.—The Commissioners must issue their season tickets, or the whole affair will be a financial failure, and about a week's delay will imperil very much the arrangements, and beyond a week it would be impossible to make any arrangements.

After a short discussion the consideration of the Report was adjourned to Tuesday next, the understanding being that the Council would come to no agreement with the Commissioners until the opinion of the Fellows was ascertained on the matter.

The Rev. C. P. PEACH called the attention of the Meeting to the fact that at the last Meeting, when the bye-laws were altered, five were put in at variance with the Charter. According to the paper they had got, they had a perfect right not to accept, if they wished, the names of Lord Londesborough or Lord A. Churchill, who, with all due respect, did not represent

practical horticulture, and who would not be of much use to the Council. He should propose the names of Sir A. Slade and the Rev. Reynolds Hole in place of their lordships [cheers], and he should also move that the five bye-laws contrary to the Charter be rescinded.

The CHAIRMAN (Mr. Saunders upon the retirement from the Meeting of Lord Lennox), said the voting must be according to the bye-laws as they now stood.

Mr. PEACH.—But they were contrary to your Charter.

The CHAIRMAN.—But they were made by the Council and must stand.

Mr. PEACH.—You have no option under the present system.

After a desultory conversation the Chairman ruled that the ballot must proceed in the usual way.

Mr. BOHN said if that was the case he advised the Fellows to vote for Mr. Williams and Mr. Hole.

Mr. ATKINSON said it was not right to propose a new man without previous notice.

The Rev. REYNOLDS HOLE said he did not come there to add to the accumulation of difficulties the Council were in, but he came with the desire of making that which appertained to his office—peace. He hoped he had not forgotten the lesson he had learned in one of the best of lesson-books—to be reverent to and obey his superiors, and therefore he thought this aristocratic element was very desirable. But why should it be exclusive of others? [hear, hear]. Why should there not be more elasticity and comprehensiveness in the Council? although he should not draw a comparison between it and that Council of Ten presided over by Appius Claudius, the Tribune [laughter]. But really the Council of the Horticultural Society did not represent the Fellows of the Society or the gardeners [loud cheers]. It was like a municipality composed exclusively of mayors [laughter]. He would say nothing of "mare's-nests" [renewed laughter]. They wanted men who not solely sought to please the promenade public, but who would please horticulturists, and promote true horticulture [hear, hear]. As to his taking Lord Lennox's place, it was not to be thought of.

The result of the ballot was then announced—viz., that Lord Londesborough, Lord Alfred Spencer Churchill, and Major R. Trevor Clarke were elected new members of the Council in place of the Bishop of Winchester, James Bateman, Esq., F.R.S., and G. F. Wilson, Esq., F.R.S., the voting being thirty-four for those recommended by the Council, and eighteen against.

The following were elected officers for the ensuing year:—President, His Grace the Duke of Buccleuch, K.G.; Treasurer, Mr. John Clutton; Secretary, Major-General H. Y. D. Scott, C.B.; Expenses Committeemen, Mr. John Clutton, Mr. John Kell, Mr. W. Wilson Saunders, F.R.S.; Auditors, Mr. James Nicholson, Mr. John Gibson, Mr. Robert Hudson, F.R.S. The Meeting was then adjourned to Tuesday next the 18th inst.

REPORT OF THE CHISWICK BOARD OF DIRECTION.

DURING the past season the work at Chiswick has been mainly directed towards the perfecting of the arrangements attendant on the alterations in the Garden in the previous year. It was then reported that in consequence of timely, though not unusually copious rainfall, the valuable collection of fruit trees had been removed with scarcely any loss. The late gloomy and rainy season was peculiarly favourable to the complete establishment of the transplanted stock, the deficiency of fruit being highly conducive to the same end.

Though there has been little opportunity for what may be more strictly considered as scientific investigation, important trials in a horticultural point of view have been carried on with respect to various objects of cultivation. Those on the different varieties of Kales and Peas were made under unusually favourable conditions. Both were very carefully examined, the latter, including upwards of two hundred reputed varieties, by the Fruit Committee, and the results in either case are recorded in the numbers of the Society's Journal recently published. In order that no dissatisfaction might arise as to results, each sample was marked with a number, the name of the contributor being kept back; and as the decisions were almost, if not quite unanimous, they may be regarded as conclusive. To eleven of the newest the Committee awarded first-class certificates. Amongst the most remarkable of the varieties in the trial were a large number raised from crosses effected by Mr. Laxton, of Stamford.

The weather was not equally favourable to trials with flowers, a worse season for Pelargoniums being scarcely conceivable. Four hundred varieties of Zonal Pelargoniums were planted out. The more delicate varieties made no growth, and even the coarser ones did not develop fully their respective merits. Of Phloxes 260 varieties, and of Pentstemons 100 varieties were also grown in the flower-beds of the new trial ground, while of Fuchsias 100 varieties were grown in pots. These last, indeed, were not subject to the continued rain, but they suffered like the other occupants of the conservatories from the continued absence of sunlight. The Floral Committee held three meetings at Chiswick for the examination of these collections, and

awarded forty-one certificates to Pelargoniums, twenty-eight to Phloxes, twenty-one to Pentstemons, and twenty-six to Fuchsias. Reports on these collections are published in the last numbers of the Society's Journal.

During the past year a large collection of Peaches, Nectarines, Apricots, and Cherries has been procured and planted against the new boundary walls for the purpose of comparison and determination of the varieties. These have all been trained in the form of single oblique cordons, so as to economise space and to secure as great a number as possible against the walls.

Owing to the late spring frosts, which caused such havoc among the fruit crops in the country generally, all out-door fruits, with the exception of Strawberries, were unusually scarce in the Garden.

The large orchard house continues very attractive. The trees during the past season were laden with fine highly-developed fruit, and were a subject of study to many of the Fellows of the Society.

The Vines in the large conservatory exhibited last year indications of languor, through defective root action. This is doubtless attributable to the horders having become exhausted; these having been renewed, a more vigorous growth and greater production of fruit may be expected next season.

A new plantation of Strawberries has been lately completed.

The trial during the next season, for which preparations are being made, will embrace all the varieties of Potatoes which it is possible to collect.

Great pains have been taken to get together a collection of such interesting hardy herbaceous plants as may be worthy of general cultivation. It is not within the province of the Society to attempt anything like a botanical collection; but within certain limits the Board are anxious to do something towards restoring a general taste for beautiful forms other than those gorgeous masses of colour which have become so prevalent, and which at one time, except for the concomitant attraction of Ferns, made fair to exclude from gardens everything except a few favoured bedding plants, which were repeated universally, with scarcely any variation.

It is desired during the coming season to get together more especially a collection of all the cultivated Asters which can be met with, with a view to a revision of the nomenclature, which appears to be in a very confused state. Any contributions from Fellows for this object will be thankfully received by the Gardener-in-Chief.

The re-establishment of the system of meteorological observations has not been effected without difficulty. The fine set of new instruments purchased by the Society from Messrs. Negretti & Zambra were personally conveyed to the Kew Observatory by Prof. Thiselton Dyer. Having been satisfactorily tested, they have been fixed in their proper positions at Chiswick, and the observations have been regularly taken with them since the beginning of July. The thermometer-stand, however, which was made at considerable expense at the recommendation of Mr. Glaisher, does not prove wholly satisfactory, and it may ultimately prove necessary to abandon it for some other arrangement.

It will be seen from the following figures that the rainfall at Chiswick of the last six months of 1872 was equal to about two-thirds of the average rainfall of the whole year (23.5 in.):

	Number of Days on which Rain fell in	1872.	Rainfall of 1872.	Average Rainfall of 44 years.
July	14	1.94	2.32	
August	13	1.88	2.41	
September	11	1.19	2.50	
October	24	4.65	2.63	
November	22	3.25	2.10	
December	22	3.94	1.53	
	106	16.85	13.49	

In the period 1826-1869 the whole rainfall of the driest year (1858) was 15.8 inch; in 1864 the whole rainfall was only 16.9 inch.

Prof. Thiselton Dyer has commenced some evening lectures on the Scientific Principles of Horticulture to the persons employed in the Garden. These lectures are still in course of delivery.

It is hoped during the present year to make some progress with the formation of a herbarium of correctly-named specimens of cultivated herbaceous plants. This will be exceedingly useful for purposes of reference, especially for naming the living collection.

A very important collection of the seeds of Cotton plants supplied by Major Trevor Clarke was raised at Chiswick for the International Exhibition, of which it proved to be one of the most interesting and attractive features during a great portion of the period the Exhibition was open to the public.

Experiments are about to be made on the practical manurial value of the various products of Major-General Scott's system of sewage precipitation.

The conservatory at South Kensington has been maintained

in an exceedingly gay condition throughout the season by means of 14,200 ornamental plants cultivated at Chiswick for that purpose; while the exterior gardens at South Kensington have been embellished by 52,000 bedding plants from the same source.

During the year about 9000 flowering plants; 16,000 cuttings of flowering plants; 1200 packets of cuttings of Apples, Pears, Plums, Cherries, Vines, and Figs; 3000 Strawberry plants; 60,000 packets of flower seeds; and 60,000 packets of vegetable seeds, have been distributed amongst the Fellows by ballot or otherwise. Large collections of cuttings of fruit trees have been sent to Australia, Canada, Natal, New Zealand, and India.

Presentations of plants, seeds, &c., have been received from, amongst others:—The Royal Gardens, Kew, Dr. Denny, Major Clarke, Messrs. Veitch & Sons, W. Bull, Knight, F. & A. Smith, Downie, Laird, & Laing, T. Laxton, Van Houtte, R. Parker, H. Cannell, W. Paul, E. G. Henderson & Son, George, Gibson, Quilter, Moore, Barron, &c.

The presentations of Peas for trial were made by Messrs. Minier, Nash, & Nash; James Carter & Co.; Sutton & Sons; Veitch & Sons; Hurst & Son; Gibbs & Co.; Wrench & Son; Howcroft & Watkins; T. Laxton; Dean; Williams; Cutbush; James Clarke; Barr & Sugden; James Dickson & Sons; F. and A. Dickson & Son; Finney, Nutting, & Son; Hooper & Co.; &c.

M. J. BERKELEY.

R. HOGG.

T. MOORE.

W. T. THISELTON DYER.

STATEMENT OF ACCOUNTS from January 1st to December 31st, 1872.

RECEIPTS.		£	s.	d.	£	s.	d.
To Balance	.....				155	15	0
Life Compositions	.....	1018	10	0			
Admission Fees	.....	529	4	0			
Annual Subscriptions	.....	7942	8	0			
Garden Produce and Charges	.....	520	5	8			
Daily Admissions and Promenades	.....	1268	1	10			
Rent of space in Arcades	.....	297	7	0			
Exhibitions and Fêtes	.....	1173	16	5			
Miscellaneous	.....	113	6	8			
Interest on Davis Bequest	.....	69	8	1			
Profit on Provincial Show Accounts (Balances)	.....	1865	14	6			
Library Account	.....	4	5	5			
Balance	.....				14,782	7	7
					376	19	9
Total	.....				15,815	2	4

EXPENDITURE.		£	s.	d.	£	s.	d.
By Chiswick Garden Expenses:—							
Rent, Rates, and Taxes	.....	281	9	1			
Labour	.....	1141	17	1			
Implement, Manure, Coke, &c.	.....	228	14	7			
Repairs	.....	112	17	6			
Trees, Plants, and Shrubs	.....	15	4	5			
Miscellaneous	.....	56	19	6			
					1897	2	2
By Expenses of Management:—							
Salaries	.....	532	16	8			
Horticultural Directors, Fruit and Floral Committees, &c.	.....	523	19	10			
Foreign Importations	.....	10	0	0			
Examination of Gardeners	.....	5	5	0			
Postages	.....	87	10	1			
Distribution of Seeds, Plants, and Cuttings	.....	149	5	11			
Reading Room	.....	20	17	3			
Gas	.....	38	7	9			
Journal	.....	2	10	6			
Wages	.....	342	10	5			
Printing, Stationery, and Almanacs	.....	139	2	6			
Miscellaneous	.....	41	1	2			
					1894	7	1

By Expenses of Exhibitions:—							
Tents	.....				500	0	0
Advertising and Posting	.....	285	0	0			
Prizes and Medals	.....	1888	13	0			
Bands	.....	610	2	0			
Police	.....	74	19	11			
Labour, Judges' Fees, Luncheons, and Sundries	.....	517	1	7			
Expenses of Permanent Exhibition	.....	75	12	10			
Superintendent of Flower Shows	.....	100	0	0			
Entomological Collection	.....	38	2	0			
					3087	11	4

By Kensington Garden Expenses:—							
Labour	.....	940	5	4			
Rates, Taxes, and Insurance	.....	922	9	11			
Water	.....	95	18	6			
Repairs	.....	369	18	2			
Implement, Manure, Coals, and Coke	.....	215	8	7			
Gravel	.....					
Trees, Plants, Seeds, &c.	.....	272	8	3			
Superintendent's Salary	.....	100	0	0			
Miscellaneous	.....	24	15	1			
Conversations	.....	56	0	0			
					2997	3	10

Rent to Her Majesty's Commissioners of 1851	.....	1200	0	0
By Interest on Debentures	1943	13	10
By Liabilities on Current Account	1865	4	1

Total	15,815	2	4
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FRUIT AND FLORAL MEETING.

FEBRUARY 12TH.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Mr. D. Piccirillo, Wigmore Street, London, sent specimens of Pink Naples Garlic, and of Naples Flat Red and Giant Rocca Onions; also a dish of the Giant Naples Chestnut, containing eighty fruits, which weighed in all 8 lbs., and Violet, Rose, and Orange blossoms for dessert. For this collection the Committee determined that a letter of thanks should be sent. Mr. Dinnoek, High Street, Ryde, showed a kind of Red Beet with green leaves, named Dinnoek's Green Top. Messrs. Carter & Co., High Holborn, exhibited some variegated sorts of Garnishing Kale. Mr. Jones, Royal Gardens, Frogmore, sent a dish of Little Gem Pea, a bundle of Asparagus containing forty-six sticks and weighing 3½ lbs., and two specimens of Hedsor Winter Cucumber; also a Smooth Cayenne Pine, and a fine bunch of Bananas, consisting of twenty-six fruits. The latter was awarded a cultural commendation. Mr. Henderson, gardener to H. W. Peake, Esq., M.P., Wimbledon House, Wimbledon, showed a bunch of Black Hamburgh Grapes, for which he received a letter of thanks. Mr. Farr, gardener to F. A. Houghton, Esq., Owlpen Park, Dursley, exhibited a specimen of the Variegated Pine Apple (*Ananassa Porteana*). Mr. J. Drewett, Denbies, Dorking, sent two varieties of Apple to be named. Mr. Bond, gardener to G. A. Smith, Esq., The Beeches, Walton-on-Thames, submitted four Queen Pine Apples to the decision of the Committee, which, although well ripened, were not considered to have any extraordinary merit. Dr. Haig brought a specimen of Uvedale's St. Germain Pear, grown in the grounds of Mrs. English, Torquay, in the open air. It was well formed, well coloured, and weighed 1 lb. 10 ozs.

Prizes were offered for the best three dishes of dessert Apples. Mr. Rutland, Goodwood Park Gardens, was first with Cockle Pippin, Ribston Pippin, and Nonpareil Russet, very good. The second prize went to Mr. Gardiner, Lower Eaitington Park Gardens, Stratford-on-Avon, for Blenheim Pippin, large and very highly coloured; Ribston Pippin, and Cox's Orange Pippin. Good fruit came from several other exhibitors. The only exhibitor of Pears was Mr. Miles, gardener to Lord Carington, who had a first prize for Prince Albert, Monarch, and Beurré de Rance.

FLORAL COMMITTEE.—Mr. J. Fraser in the chair. Messrs. J. Veitch & Sons sent a splendid collection of Orchids. Prominent amongst them were some exceedingly fine forms of *Odonoglossum crispum* (*Alexandrea*), some fine spikes of *O. gloriosum*, and what is presumably a natural hybrid between the above, *O. Andersonianum*; also *Dendrobium crassinode* with one flowering spike, the largest yet seen—it had thirty-five flowers on it; of *Mormodes colossus*, two fine spikes, eight or nine flowers on each; *Masdevallia Veitchii*, wonderfully brilliant in colour; and several specimens of *Lycaste Skinneri* covered with a profusion of fine flowers, and singularly gay and attractive. An extra prize was awarded for the group, and a cultural commendation for *Dendrobium crassinode*. Mr. B. S. Williams, of Holloway, had an extra prize for a fine collection of Orchids, Ferns, and Palms. In it were *Cœlogyne cristata* covered with its chaste blooms, *Cattleya Trianae* with rich-coloured labellum, *Cypripedium Warneri* and *C. villosum*. Mr. W. Bull, of Chelsea, staged some fine plants, including Orchids, for which he had likewise an extra prize. *Encaphalartos villosus amplifolius* with immense spreading leaves was deservedly honoured with a first-class certificate. *E. villosus expansus* is also a very handsome species. *Anthurium Scherzerianum* had very large spathes. The collection also contained a well-grown pan of *Trichomanes radicans*.

From Mr. Denning, gardener to Lord Londesborough, Northampton, came a splendid group of Orchids, which had a cultural commendation. It contained a magnificent example of *Cœlogyne cristata*; very fine examples of *Cypripedium villosum*; *Odonoglossum cordatum*, *Alexandrea*, and *roseum*; *Dendrobium heterocarpum*; *Cypripedium Lowii*, with three spikes and nine blooms; the brilliant orange *Masdevallia ignea*, *Cattleya Skinneri* and *Trianae Ruckeri*, the latter very fine; and *Lælia autumnalis grandiflora*. The latter had five large beautifully coloured flowers, and received a first-class certificate.

Mr. Lawrence, gardener to Bishop Sumner, Farnham Castle, sent *Vanda gigantea* with a fine spike of its brown-spotted, yellow, fleshy flowers. This, too, had a cultural commendation.

Mr. James, gardener to W. F. Watson, Esq., Redlees, Isleworth, contributed a group of Chinese Primulas, white and crimson, with very large blooms. One, named Marquis of Lorne, was especially fine. For these and a group of *Cyclamens* an extra prize was awarded. From Mr. Harris, gardener to A. C. Ashby, Esq., Nasely Wooleys, came Chinese *Primula Superlative*, remarkably double and very free-flowering. Mr. Goddard, gardener to H. Little, Esq., Cambridge Villa, Twickenham, sent a splendid collection of *Cyclamens* well varied in colour and full of bloom. These received a cultural commendation; and one of them, called White Perfection, a fine white, had a first-class certificate. A cultural commendation was also given to Mr. Kings-

bury, Bevis Nursery, Southampton, for a group of Primulas. Mr. Ware, Hale Farm Nurseries, Tottenham, had an extra prize for a good collection of hardy fine-foliaged and flowering plants; and a like award was made to Messrs. Standish & Co., of Ascot, for a charming group of Azaleas, Lily of the Valley, *Spiræa japonica*, &c., together with cut Roses. Mr. Williams, Holloway, had a cultural commendation for a large and handsome plant of *Camellia Jubilee*, bearing a profusion of flowers, also one for a group of Chinese Primulas.

Mr. W. Paul sent four stands of Camellias, and two boxes of Waltham White Primula, and for each he received a cultural commendation. The Primulas were snowy white, with yellow eye, petals finely fringed, and of good substance. The best Camellias were the Double White, Imbricata, Monteroni, Cup of Beauty, Pimbrata, Vicomte de Nieulant, Bonomiana, Adelfina Benvenuta, and Rubens. A flowering spike of *Sphaerogyne latifolia*, the inflorescence somewhat resembling a flowering spike of the Horse Chestnut, was sent by Mr. Green, gardener to W. W. Saunders, Esq., Hillfield, Reigate, and had a cultural certificate. A first-class certificate was given to Messrs. Jackman and Son, of Woking, for a beautiful golden variety of the western *Arbor Vitæ*, of dwarf and compact habit. Mr. Rutland, gardener to the Duke of Richmond, Goodwood, sent a collection of Cattleyas.

Prizes were offered for the best six Chinese Primulas. Mr. Goddard was first with extremely well-bloomed plants of red, white, and lilac varieties chiefly of the Fern-leaved class, and this not only in the size, but also in the colour and profusion of the flowers. Mr. Farrow, Brigadier Hill, Enfield, was second with an excellent group. Of *Lycastes*, the only exhibitor was Mr. Denning, who had a first prize for fine specimens of varieties varying in intensity of colour and marking, but none more beautiful than the milk-white one.

STRAWBERRY PLANTS FOR FORCING.

Your correspondent Mr. Mowbray, in asking for opinions on this subject, is quite right. Here we force Strawberries in large numbers, but not ten thousand, as reported to be forced at Sandringham. We generally begin to gather the first week in March, and continue gathering until fruit come in outside. Our stock this season is 2500, which keeps us well on until the last week of May. In July we plant-out good runners in well-prepared land, taking them up in February or March and potting them, filling the orchard houses with some at once. Our first gathering from these plants last year was on the 25th of May. The large quantity of air admitted is the very life of them. The fruit is of fine colour and flavour, and, if President and Sir Charles Napier be used, of an enormous size.

For upwards of thirty-five years I have been engaged in Strawberry-forcing, and for four years I was foreman to the late lamented Mr. G. McEwan at Arundel, and the records of all our horticultural exhibitions of that day show plainly his success as an accomplished Strawberry-grower.

With respect to storing, I use the same plan as my dear old master. When they are ready for storing every plant is properly cleaned and slightly surfaced, all put down level, and the day before storing I give through a rose a good dose of clear lime water, which kills all worms and keeps the plants sufficiently damp during the time they are at rest. They are then stacked in sawdust, and in snowy weather or very severe frost covered with fern. I find fresh sawdust an excellent material for this purpose, inasmuch as there is a slight heat. Some plants taken out yesterday showed the young white roots at the crock-hole, which is a healthy sign, but all should be set level on the ground before March 1st. The varieties are Keens' Seedling, Sir Charles Napier, President, and British Queen for the last crop in the forcing houses. —R. GILBERT, *Burghley*.

"THE GORRIE" PATENT GROUND-FAST PLANT TALLY.

Or all horticultural appliances there are none which are more troublesome to gardeners than tallies, and especially tallies for out-door use. Wood quickly perishes, earthenware gets broken, and cast iron both rusts and gets broken. Throughout a long experience we have tried every description of plant label that has ever come under our notice, and we have come to the conclusion that there is none which is so durable as that made of zinc and simply written upon with a quill and suitable ink. More than thirty years ago we planted an orchard of pyramid fruit trees, in which there were not fewer than five or six hundred trees, all of which were marked with strips of zinc on which the names were written with the ink referred to, and

to this day these labels are as unimpaired, and the writing as distinct, as they were when attached to the trees:

The Gorrie tally is a plate of zinc on which the name of the plant is written, and this is fitted into a galvanised iron frame, which has a long stem of twisted stout galvanised wire terminated by a round foot, which keeps the tally firm in the ground, and prevents it from being removed except by a special effort. The material of which the tally is composed, with the exception of the zinc plate, being entirely of this stout galvanised wire, it is not liable to decay incident to wood and cast iron; and being somewhat elastic and yielding to pressure, it resists with impunity the accidents arising from tools and wheelbarrows coming violently in contact with it. This tally is made of various sizes. The largest is 1 foot 9 inches high, and is called the "Arboretum Tally." For such establishments as Kew, and other large places where arboretums exist, this would be invaluable. Then there are the "Rosery Tally," 15 inches high; the "Herbaceous Plant Tally," a foot high; and the "Alpine Tally," 9 inches high.

coddling would suit it well. People try to grow it, believe all that they have heard about it, try the nostrums, and as a consequence fail. There is one thing I am persuaded of—that the most rational way of growing it is not to use a highly stimulating compost for the winter potting, and then to top-dress richly in the month of February. I have had more success in growing them since I adopted this plan than I ever had before; the flowers have been large and at the same time quite in character, the foliage clean and vigorous, and the death-rate smaller.

It will be remembered that we had, very early in the winter of 1871, a very sharp frost, which was in my opinion favourable to the Auricula. It checked any premature attempts at blooming, and, where the precaution of well covering the frames is adopted, frost is in no way injurious to the Auricula. Damp is its great enemy, and when that is combined with a warm atmosphere the Auricula suffers. At the time of top-dressing, my plants looked stout and promising; and although an outsider would think them then as unlikely to do much, yet a



For this ingenious and well-contrived garden appliance the public are indebted to Mr. William Gorrie, of Edinburgh; and it is through the courtesy of Messrs. Little & Ballantyne, of Carlisle, who are agents for the sale of them, that we are enabled to lay both descriptions and illustrations of them before our readers.

THE AURICULA BLOOM OF 1872.

I HAVE had long experience as an Auricula grower, extending now over five and thirty years, but I do not recollect in all that time a more favourable season for the Auricula than that of 1872. I have never seen flowers more thoroughly in character—large without being coarse, and foliage vigorous but not rampant. Certainly my own collection never was so good or did me such good service. With the exception of the year when the National Auricula Show was held some years ago at the Royal Botanic Society's at the Regent's Park, so many have not been exhibited at one time as at the Royal Horticultural Society's Show on April 19th, when the Society's prizes and those offered by the Metropolitan Floral Society were competed for; not but that there is room for many more exhibitors, and I for one would gladly hail such an accession of new men as would throw more vigour into the competition. I do not believe the plant is so difficult to grow as many have declared, and that a little more simplicity and a little less

grower knows that if you have a good stout collar to your plants they will soon develop into fine plants. The spring frosts that we had did not injure plants which were protected in frames, however injurious they were to fruit-tree blossoms; and by blooming-time the trusses were well developed, and the position I was enabled to take at the exhibitions showed that my anticipations had been correct. A few notes on the varieties exhibited may perhaps be interesting to those who care for this lovely spring flower.

Green-edged varieties are never so numerous as the grey-edged varieties, and therefore I was glad to see a new flower of Mr. Headly's, which, if I be a good grower, is likely to be an acquisition—Alderman Wisbey: it is a little rough on the edge, but is otherwise fine. One of the best green-edged flowers exhibited was Traill's Mayflower; as shown it bore some analogy to a good Oliver's Lovely Anne, but was better than that variety. Colonel Taylor was once exhibited, and only once, and hardly, I think, merits the high opinion that is entertained of it. Smith's Lycurgus was very fine, but the plant has a peculiar failing of gumming its leaves together, and mine were affected in that way. Hudson's Apollo did not do well with me, but I had several fine blooms of Traill's General Neill, although they were over before the exhibition day. It is an admirable grower, produces offsets freely, and is a very neat-flowered plant.

In Grey edges Headly's George Lightbody unquestionably

took the lead. The four plants entered for the premier prize in Grey edges were all of this variety—an evidence of the opinion entertained of it by growers, and well it deserves the partiality shown to it. Next in excellence I must, I think, put Lightbody's Richard Headley. Although some have found fault with it for not opening flat, with me it generally did so. Good old Lightbody had a high opinion of his Robert Trill, but I have never had a satisfactory bloom of it. Chapman's Maria, although not sufficiently defined in its edge, was yet most lovely, and no lover of the Auricula can ever dispense with so beautifully coloured a flower. Cheetham's Lancashire Hero, which before the advent of George Lightbody was considered the best grey edge, was also very fine; it is, however, somewhat late in blooming. Fletcher's No Plus Ultra although very large was coarse, and while I must keep it for the stage, I question very much if it will ever do for the exhibition table again. Waterhouse's Conqueror of Europe is another old flower of good character, but still not equal to the more modern ones.

White edges are a scarce class. Taylor's Glory seems almost a thing of the past, and yet it is the very best and purest white edge we have, many of the others having quite as much grey as white in them. This is the fault with Smiling Beauty and Popplewell's Conqueror, while Countess of Dunmore has the division in the segments too marked. Two of the best white-edged flowers I had last season were Smith's League and No Plus Ultra; the latter, especially, was very good.

Selfs are a numerous class, and a very attractive one. Spalding's Metropolitan was lovely with me; its intensely beautiful blue captivated all who saw it. Campbell's Pizarro is one of the best dark-coloured flowers we have, although at times apt to split in the paste. But the best flower of that type that I had was Lightbody's Lord Clyde, a deep rich maroon with a dark green leaf. Spalding's Blackbird was also very good, although apt to be a little thrum-eyed—that is, to throw up the stamens above the eye. I did not see, except in very imperfect form, Campbell's new Selfs, but Mr. Horner, no mean authority, thinks highly of them.

I have a few notes on some seedlings of which pips were sent to me, and I may give them next week, and must now close these rambling notes.—D., Deal.

MRS. IVES' BOOK ON GILLIFLOWERS.

IN my inquiries about the old name Gilliflowers, it would seem that I have stumbled upon traces of what must be a very rare book indeed, when you doubt its ever having been in existence. That such a book was published, however, there can be little doubt, and I am not without hopes of being able by-and-by to make and establish for her the claim—not an unenviable one—of being the first lady writer on horticulture in England.

The enclosed leaf is taken from a short list of old books on gardening and rural economy, and in it you will see mentioned the good old lady's quarto volume. I have also seen it in another old catalogue, which I am sorry is not now in my possession, but I am nearly positive that the date there assigned to it was 1690.

The work mentioned at the head of the list I send you is entitled "A Dictionary of Husbandry, Gardening, Trade, Commerce, and all sorts of Country Affairs. Printed in London for James and John Knapton and others," and bears the date of 1726 on the third edition. The compilers of this dictionary give Mrs. Ives' book as one of their books of reference; so that from this you will see, although not entombed in the British Museum, it is not entirely forgotten, and its authoress, if she be a myth, is at least a very old one.

In this same dictionary may also be found most of the old names I mentioned; thus under the heading of "May" we read—"This month presents us with an infinite number of all sorts of flowers, such as Tulips, Stock-Gilliflowers of all colours, Primroses both deep and pale blue, Musures, Daisies, Flames, Spring Honeysuckles, Roses of Geldabond, single Anemones, single and double Narcissuses, Peonies both of the flesh or carnation, and of the very red colour like the Persian Lily, Bee-flowers, Star-flowers, Julians, Yellow Trefoil growing on a shrub, Marigolds, Sedums, Muskets, white Stock-Gilliflowers, Columbines, Plumed or Panached Jacinths, yellow Martagons, and a multitude more." And in the calendar for October, "The planting of Ranunculuses, Tripoly, Vernal Crums, &c., and to remove seedling Holy-Hocks and others are also proper, as 'tis the time of year to plant choice Tulips which you feared

to inter the beginning of September." These and other operations the reader is advised to carry on during "benign intervals," but whether such are to be looked for and taken advantage of in the weather or the cultivator, does not very plainly appear.—R. D. TAYLOR.

[The leaf sent to us by our welcomed correspondent is from the third edition of a book of which we have seen only the first edition. This is entitled, "Dictionarium Rusticum; or a Dictionary of Husbandry, Gardening, Trade, and Commerce. With plates; two volumes 8vo., 1704." We do not know the date of the second edition, but the third was published in 1726, and the fourth in 1728. On the leaf sent is a list of the books on gardening "made use of" by the compilers, and among them is "Mrs. Ives' Way of Ordering Gilliflowers and double Stocks, 4to." If that list was in the edition of 1704 we overlooked it.

Musures, we believe, were the species of Mouse-ears. *Flames* or *Flamy* are a rare old local name for the Pansy. *Roses of Geldabond* are our Guedre Roses. *Bee-flower* is the *Ophrys apifera*. *Star-flower* is our Aster. *Muskets* are the Musk'd Crane's-bill. *Jacinths* are Hyacinths. *Tripoly* is our Aster Tripelium.—Eds.]

ROSES IN THE NORTH.

EVERY admirer of the queen of flowers must feel deeply grateful to Mr. Hinton for his most interesting and painstaking Rose poll, and it is to be regretted that there seems to have been no return from these northern regions. Although it is not to be expected we could compete in the cultivation of England's emblem, still it would have been interesting to have noted the varieties possessing the hardihood of constitution to succeed among our Thistles. Being of the "modest Rose-growing" class, cultivating only some 150 varieties, I do not intend now to step forward with a supplementary list as the Scottish representative, but merely to note two or three varieties that do, and as many more that do not, succeed with us.

To begin, then. The premier Rose, Charles Lefebvre, well deserves his place—a most robust free grower and constant good bloomer, making shoots often fully 10 feet in length in a season; and I have had the pleasure of cutting well-formed blooms, the other mild fall so late as the 4th of December. Would I could say as much for the gorgeous-coloured *Maréchal Niel*. Since its introduction I have spent more money in its purchase than I dare reckon up; I have tried it extensively on its own roots, *Manetti*, *Briar*, and *Gloire de Dijon*, and all these years to no purpose, for I have never been rewarded by even a single bloom, except when the flower-buds had been well developed under glass before being planted-out. I have grown it on walls, trellises, and poles. On its own roots it will not survive a sharp winter; on the *Manetti* stock it is little better; on the *Briar*, trained pendulously, I have forced it into flower-bud in April, but on the slightest check the buds dropped, and again it would bear another crop of promise in autumn—too late to open. Mr. Rivers, jun., made a valuable discovery in finding *Gloire de Dijon* was its most suitable stock. I was delighted with a beautiful box of blooms exhibited in early summer a year or two ago at a Glasgow show; they were grown in the open air, but on making inquiry I found the stock on which the plant was budded was *Gloire de Dijon*. The locality—the warm and sheltered sea-beach on the southern shore of an arm of the Clyde—and the enthusiastic grower, to effect his purpose, having availed himself of the additional warmth afforded by the flue of a baker's oven to which the plant was trained, explained the phenomenon. In Scotch catalogues, at least, this Rose ought always to be described as for the conservatory only; out of doors it is an utter failure.

No. 3, *Alfred Colomb*, is too weak a grower to have gained such prominence, but it is at the same time a very free bloomer, and possesses the additional advantage of being bright and fast in colour, not sporting to the many shades of purple numbers of the reddish crimson class do. *Madame Rothschild*, coming next in order, is of a nice soft colour, and beautiful in the half-expanded stage, but altogether lacks the central stuff of her next-door neighbour, *John Hopper*, first-rate in every respect. *Séateur Vaisse*, too, is lower down than I would have anticipated; as for colour, growth, and free-blooming qualities it is hardly to be equalled, and as a competition flower it is generally awarded the proud distinction of the best bloom in the room at exhibitions in our quarter. I recollect of seeing a large quarter in a nursery, planted with all the Hybrid Perpetual varieties, quite a blaze of beauty at the time of my

visit; and viewing the sloping bank from a little distance, for freeness of bloom and brightness of colour the lines of John Hopper and Sénateur Vaisse stood out pre-eminently over all the rest. Duke of Edinburgh, good in growth and colour, comes so invariably one-sided and malformed, that I shall be obliged to throw it out. How disappointing to the modest grower armed with notes from our Journal, the opinions of authorities, on visiting the nursery to find the growths of many recommended of the weakest description; and he may safely calculate that, if these be the results obtained in nurseries in the south of England, or even France, transplanted from their sunny skies to his ungenial clime, how short, beyond affording him a bloom or two on the wood so ripened, must be their existence. And experience will have taught him not to repeat the experiment with Marquise de Mortemart, Madame Furtado, Xavier Olibo, Louise Van Houtte, and many others. For white and light colours Madame Vidot, Mrs. Rivers, Acidalie, and Virginal are useless; while Gloire de Dijon, Souvenir de la Malmaison, Baronne de Maynard (smallish, but pure white), Boule de Neige, Louise Darzens, Madame Bonnaire, are all useful and good; but when is a white Charles Lefebvre to appear?

I was delighted to see good old *Devoniensis* at the head of the Teas. A plant on its own roots put out eighteen years ago has stood without the slightest protection, though cut to the ground with zero frosts on more than one occasion, and blooms on as beautifully as ever. Madame Falcot and Homer are very free bloomers on the Manetti, and both beautiful in the bud; the former is, however, a little tender. Three Roses—Céline Forestier, Triomphe de Rennes, and Solfaterre—of the Noisette class, always highly esteemed in the south, are worthless with us, the first named scarcely blooming; while on the Manetti that beautiful Tea, Sombreuil, is gorgeous, being by far our best light autumnal bloomer. Of course they are all grown as pole Roses, but in a sheltered warm nook. Léopold Premier is another good autumnal bloomer of the crimson class, and succeeds in a shaded spot; and what finer for a pillar Rose than the superb Charles Lawson? And can I close without a word of praise for the good old sporting Général Jacqueminot? Of course, although rather loose in his habits for the exhibition table, yet in certain stages and in some lights he flaunts a shade of colour second to none, and is besides invaluable for the bouquet and for garden decoration.

With the exception of a few Teas and Mosses on the Briar, Manetti is the only stock for successful cultivation in a light soil.—A RENFREWSHIRE BEE-KEEPER.

JOHN POWELL STRAWBERRY.

I was much pleased on reading your Journal of December 26th, 1872 (page 308), to find Mr. Radclyffe speaking so highly of John Powell. I am quite willing to endorse all, and more than all, that he has said respecting it. I have grown it by the side of several other sorts; for instance, Dr. Hogg, Eclipse, La Constante, British Queen, President, and others, and, with me, I have no hesitation in saying that, under fairly good out-of-door treatment, for all purposes it is the best berry that I have grown. If I were asked which Strawberry I should grow for all purposes, supposing that I could only grow one sort, I should say, Give me John Powell before all the rest. I am the more anxious to speak thus highly of John Powell, because the Rev. W. F. Radclyffe is the only one by whom I have seen it brought prominently forward in print.—E. S. N.

GLAZED COPINGS.

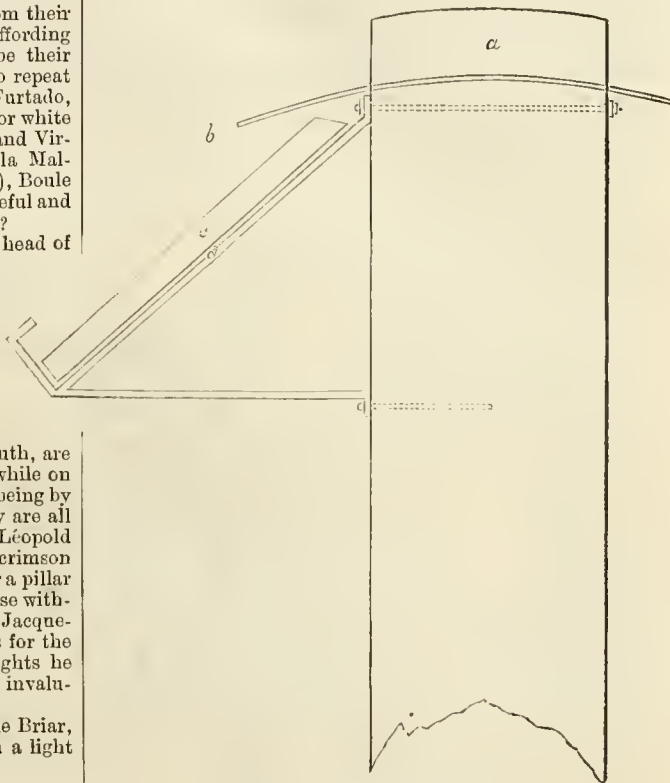
In your Journal of the 30th January, in answer to a correspondent "T. F.," you give drawings and a description of Parham's patent glass copings. I now send drawings and a description of the coping I adopted in the spring of 1870, taking the plan from Robinson's "Parks and Gardens of Paris," (page 585). The brackets were made by Messrs. Brown, 90, Cannon Street, London. The frames were made of rough wood covered with tarpaulin, costing about £3 for 120 feet. The result has been so far satisfactory. The year 1872 was the worst for fruit in this neighbourhood that has been known for some years—so much so, that in general there was little or no fruit on open walls. I used no nets, yet the crop of Peaches and Nectarines was a very fair one, some of the trees having a full crop. I have now substituted glass lights for the tarpaulin for 80 feet, and am trying them alternately with the latter. The

brackets are fixtures, and the lights are easily put in their place in a few minutes. When hinged together in pairs they are useful in summer and autumn for protecting plants and seeds.

Cost of 120 feet of temporary coping 2 feet wide.

24 galvanised iron brackets at 4s. 6d.	£5 8s.
Bolts and fixing	1 3s.
12 glass lights 10 ft. by 2 at 17s. 4d. each	£6 11s.
	10 8s.
	£16 19s.

Cost per running foot, 2s. 10d.



Glazed Coping.—Scale 1 inch to a foot.

a, Brick on edge set in cement. b, Permanent coping.
d, Galvanised-iron brackets.

The glass lights are chamfered at one edge so as to hinge together when not required for the wall, so as to be useful for protecting seeds or plants. Cost of hinges and fitting, 2s. per pair.—J. W. GREY, *Lynwood, Berks.*

A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 2.

SECTION I. For which the mean temperature should average about 60°, but which will thrive in winter at a temperature of about 38° or 40°.

ANGULOA.

THIS genus does not find great favour with many Orchid cultivators, yet the various species produce large, Tulip-shaped, richly-coloured flowers, possessing a strong aromatic perfume. The labellum is hinged, and, together with the column, being at the bottom of the cup-shaped blooms, they have been likened by some imaginative writers to a baby lying in a cradle; but having had ample opportunities of becoming familiar with both babies and cradles, I have never been able to realise the similarity said to exist in the blooms of this genus.

There are several very beautiful species of this family, but two kinds will be sufficient in a small collection. They may be potted in good rough peat and sphagnum moss, and the pots well drained. They delight in an abundant supply of water and heavy shade while growing, and even during the winter months should not be subjected to severe drought. They form large, stout, pseudo-bulbs, which are surmounted with large, broad, plaited, dark green leaves. The flowers are borne singly upon erect scapes, and continue a long time in full beauty if ordinary care be bestowed upon them.

A. CLOWESII.—A robust plant, producing large Tulip-shaped flowers, which are rich deep yellow in colour; its perfume somewhat resembles that of a chemist's shop, and is not agreeable to some constitutions. The flower is very showy and handsome, coming in about May and June. Native of Columbia.

A. UNIFLORA SUPERBA.—A less robust-growing plant than the previously-named kind. The flowers are white, dotted on the inside of the sepals and petals with chocolate brown. It blooms in May and June. Native of Columbia.

BARKERIA.

The species of this genus are all extremely handsome when in bloom, and as several of them produce their elegant flowers during autumn and winter, they become doubly valuable. Pot

culture is not suitable or congenial to *Barkerias*, they should therefore be grown upon blocks; but as they do not adhere very firmly to these, perhaps the very best contrivance for them is a rough cork basket. The plants should be made fast with copper wire, and a little live sphagnum used amongst the roots; but very little moss or peat is necessary, as the roots, which are thick and fleshy, usually grow straight out into the air. During the season of rest the plants lose their leaves, and at this time amateurs generally dry the life out of them; this, however, is wrong treatment, as the blocks or baskets should be occasionally syringed, even when the plants are dormant, otherwise the following season's growth will be very weak and the flowers somewhat microscopical.

B. SKINNERI.—No more charming object for a Christmas bouquet could be wished for than a few spikes of this plant,



Barkeria Skinneri.

represented in the accompanying engraving. The stems are from 9 to 12 inches high; the spikes are long, produced from the top of the shoots, and bear a quantity of lovely deep rose-

coloured flowers, which last many weeks in perfection if kept from damp. It blooms during the dull autumn and winter months. Native of Guatemala.—**EXPERTO CREDE.**

THE BRITISH OAK.—No. 1.

"HEARTS of Oak are our ships, hearts of Oak are our men," is still a truism. Iron-clads are a sprinkling, but the multitude of our ships are still of the Oak; and long may it be so, although the rhythm would be as good and as true—"Forms of iron are our ships, hearts of iron are our men." This, however, is only an "aside" utterance, for on the present occasion we purpose confining our notes to the beauty and utility of the British Oak; we have no purpose in our pen to touch upon any other Oak, from that at Mamre to the Chinese Oak discovered in 1850. The beauty of the British Oak, *Quercus Robur*, is fully felt by all who have a just appreciation of tree form and forest scenery. "It is confessedly," says Gilpin,

"both the most picturesque tree in itself, and the most accommodating in composition. It is suited to the grandest, and may with propriety be introduced into the most pastoral. It adds new dignity to the ruined tower and gothic arch by stretching its wild moss-grown branches athwart their ivied walls—it gives them a kind of majesty; at the same time its propriety is still preserved if it throws its arms over the brook. Milton introduces it happily even in the lowest scene—

'Hail-by, a cottage chimney smokes
From between two aged Oaks.'

The point of picturesque perfection is when a tree has foliage enough to form a mass, and yet not so much as to hide the



THE GREAT IANSHANCER OAK.

branches. One of the great ornaments of a tree is its ramifications, which ought to appear here and there under the foliage even when the tree is in full leaf." Strutt adds, "Beauty united with strength characterises all its parts. The leaves, elegant in their outline, are strongly ribbed, and firmly attached to the spray, which, although thin and excursive, is yet bold and determined in its angles; whilst the abrupt and tortuous irregularity of its massive branches admirably contrasts with the general richness and density of its clustered foliage. Even as a sapling, in its slender gracefulness it exhibits sufficient firmness and indications of vigour to predicate the future monarch of the wood, a state, indeed, which it is slow to assume, but which it retains through many ages; and when at length it is brought to acknowledge the influence of time, and becomes 'bald with dry antiquity,' no other production of the forest can be admitted as its rival in majestic and venerable decay. The general form of the Oak is expansive, luxuriant, and spreading. Its character, both with respect to its whole and to its larger masses of foliage, is best expressed by the pencil in bold and roundish lines, whether as single trees, as groups, or as forming the line of a distant forest." "The genuine bark of an Oak," says Gilpin, "is of an ash colour, though it is difficult to distinguish any part of it from the mosses that overspread it, for no Oak, I suppose, was ever without a greater or less proportion of these picturesque appendages. The lower parts, about the roots, are often possessed by that green velvet moss, which, in a still greater degree, commonly occupies the bole of the Beech, though the beauty and brilliancy of it lose much when in decay. As the trunk rises you see the brimstone colour taking possession in patches. Of this there are two principal kinds—a smooth sort, which spreads like a scurf over the bark; and a rough sort, which hangs in little rich knots and fringes. I call it a brimstone hue by way of general distinction, but it sometimes inclines to an olive, and sometimes to a light green. Intermixed with these mosses you often find a species almost perfectly white. Before I was acquainted with it, I have sometimes thought the tree whitewashed. Here and there a touch of it gives a lustre to the trunk, and has its effect; yet, on the whole, it is a nuisance; for, as it generally begins to thrive when the other mosses begin to wither (as if the decaying bark were its proper nutriment), it is rarely accompanied with any of the more beautiful species of its kind, and, when thus unsupported, it always disgusts. This white moss, by the way, is esteemed a certain mark of age, and, when it prevails in any degree, is a clear indication that the vigour of the tree is declining. We find, also, another species of moss of a dark brown colour, inclining nearly to black, another of an ashy colour, and another of a dingy yellow. We may observe, also, touches of red, and sometimes, but rarely, a bright yellow, which is like a gleam of sunshine; and in many trees you will see one species growing upon another, the knotted brimstone-coloured fringe clinging to a lighter species, or the black softening into red. All these excrescences, under whatever name distinguished, add a great richness to trees; and when they are blended harmoniously, as is generally the case, the rough and furrowed trunk of an old Oak adorned with these pleasing appendages is an object which will long detain the picturesque eye."

"The Great Oak of Panshanger" is characterised by all the attractions thus described, and therefore, as well as for its grandeur of form, size, and age, we have selected it as a model specimen of our national tree. Oaks must have been abundant in this manner, even in the days of William the Conqueror, for Domesday Book records that its woods afforded "pannage for forty hogs," and various records notice the production of oaken timber on other parts of the valley, through which flows the river Mimeram. On the north-east bank stands "The Great Panshanger Oak." In 1719 this tree was measured, and found to contain 315 cubic feet of timber. In 1804 it was again measured, and then contained 796 cubic feet, including those branches which were sufficiently large to be considered timber. It was called "the Great Oak" in 1709, and when Arthur Young measured it in 1804 it was 17 feet in circumference at 5 feet from the ground; he adds, "It is one of the finest Oaks which I have seen, though only 12 feet to the first bough." Our portrait is of the tree when it was in the meridian of its vigour, but Mr. Ruffett, the gardener at Panshanger, informs us that "the top branches are now decaying, although the lower part appears as sound as any young growing tree." Mr. Ruffett adds that the extreme height is between 65 and 70 feet; extent of branches from stem of tree, 48 feet; cir-

cumference of the tree's stem 2 feet from the ground, 22 feet 9 inches; 12 feet from the ground, 20 feet 6 inches; 22 feet from the ground, 16 feet 6 inches; 32 feet from the ground, 15 feet; 48 feet from the ground, 9 feet.

Next, regarding the usefulness of the Oak as an ornamental tree, we must always have regard to the soil we have to plant, and the rate at which a tree grows. On these circumstances our latest and practically good authority is Mr. Brown, who, in his volume, "The Forester," says:—"The rate of growth and quality of Oak timber, like those of all other trees, depend very much upon the nature of the soil and situation upon which it is grown; and the result of my observations is that the best-grown Oak trees are to be found on a heavy deep clay soil, or heavy loam of a deep description, into which the roots can get well down without any check from a change in the character of the subsoil. On a light loam I have seen good timber of *Q. pedunculata* produced. On this description of land I have seen trees from 12 to 18 feet in circumference of stem; but under these circumstances as to soil, the trees are generally found short of stem and large-headed in proportion; while trees of the same circumference of stem, and grown on deep heavy land, carry their stems very much higher, and therefore form more proportionate and ornamental trees. On high-lying and exposed situations the Oak will grow, and even become timber of useful size, although the soil be but poor; but to produce Oak of the best description, whether as to the dimensions of the tree or quality of its timber, it must be planted on rather a low-lying part, and on a heavy or loamy soil." The rate of increase in the diameter of the stem is recorded by Mr. Brown as follows:—

AGES OF TREES.	DIAMETER IN INCHES 8 FEET FROM THE GROUND.		
	1st. On favourable Soil and Site.	2nd. On moderately favourable Soil and Site.	3rd. On unfavour- able Soil and Site.
Oak at 10 years old.....	3	1½	1¼
" 20 "	4½	3	2½
" 30 "	9½	7	4½
" 40 "	16	12½	8
" 50 "	20½	16	9
" 60 "	25	18	10
" 70 "	29	19½	11
" 80 "	31½	20½	11½
" 90 "	32½	21½	..
" 100 "	33½	22	..
" 120 "	34½	..	..

For ornamental planting it is of more importance to know the rate of growth in height, and on this point Mr. Brown has obligingly written to us as follows:—"On the average, and on a favourable soil and site, Oaks at ten years of age will stand 15 feet high; at twenty years of age, 28 feet high; at thirty years of age, 40 feet high; at forty years of age, 48 feet high; at fifty years of age, 55 feet high; at sixty years of age, 62 feet high; at seventy years of age, 66 feet high; at eighty years of age, 70 feet high; at ninety years of age, 73 feet high; at a hundred years of age, 75 feet high. You may safely publish these heights as the average of the Oak at the ages stated, for they are from actual measurements taken by myself at various times, and intended to be used in the next edition of my book."

The other uses of the Oak are thus epitomised by Dr. Hogg in his "Vegetable Kingdom":—"The wood of the Oak is harder and more solid than that of any other European timber tree, and, as is well known, is largely employed in ship-building, carpentry, waggon work, cabinet-making, mill work, and coopering. The bark is of great utility, as furnishing in greatest abundance the article known as tan for tanning hides and skins, and this property is owing to the presence of a great quantity of tannic acid; it also contains a peculiar bitter principle, known by the name of quercin; after the bark has been used in the tanyard it is employed for making hotbeds in forcing houses. Acorns, or the fruit of the Oak, are highly nutritious to various animals, but particularly to hogs, which rapidly fatten on them; and it has been observed that those are best for the purpose that have been washed and dried by exposure to the air. In Turkey the acorns of several sorts of Oak are buried in the ground, in the same way as cacao beans are, to deprive them of their bitterness; they are then dried, washed, and reduced to powder with sugar and aromatics; the substance thus formed is called palamonte, and the food that is prepared from it is called racahout, and is used in the

seraglios to fatten and keep up the embonpoint of the sultanas. In some parts of Europe acorns are said to be converted into bread. By analysis they have been found to contain in 1000 parts, fixed oil, 43; resin, 52; gum, 61; tannin, 90; bitter extractive, 52; starch, 385; lignin, 319; and traces of potash, lime, alumina, and some earthy salts; by which it will be seen that they contain more than a third of nutritive matter, and that consequently they are capable of being taken as food, particularly when they have been deprived of their resinous and extractive matters. In Italy the oil is extracted and applied to burning in lamps, but it does not appear that much attention has been given to this branch of industry. It is stated by Dr. Barras that he found the infusion of roasted acorns, sweetened with sugar, of great advantage in promoting digestion, if taken in the same way as coffee, after meals; and that he has seen dyspepsia, and even disordered stomach, cured by the use of them; the acorns and their cups have been found useful as an astringent in mucous diarrhoea."

WORK FOR THE WEEK.

KITCHEN GARDEN.

Is mild weather the *Asparagus* in frames or pits should have abundance of air after the shoots have made their appearance. Prepare ground for permanent beds if the soil works well. Plenty of good rotten stable manure should be used. A little seed of Early Horn Carrots may be sown on a sheltered warm border when the soil is dry and works freely. Those in frames should be thinned when an inch or two high. The greatest attention should be paid to the state of the *Cucumber* bed for the first fortnight after the plants are turned out. The heat-stick should be examined daily. Prepare the ground for planting *Horseradish*. Dig two spits deep if the soil will admit of doing so. No manure should be dug-in unless the ground is very poor. *Jerusalem Artichokes* may be planted. Plant the *Onions* of last year which begin to grow; they will be very useful when there is a scarcity of sound ones. Plant Underground *Onions* if not done in the autumn. Weed and clean the autumn crop. A good sowing of *Parsley* should be made as soon as the ground is in a fit state to receive the seed. Make a sowing of Knight's Dwarf Green Marrow *Peas*; at the same time some other approved sorts should be sown to keep up a succession. Two or three crops of those sorts which come in for use quickly must be sown, and will be ready before the Marrows. If any *Potatoes* were placed in a forcing house a fortnight since, as recommended, they will now be ready to plant out: a very moderate heat will be sufficient. Plant some on a warm sheltered border if the weather be mild and favourable. A few rows of *Spinach* may be sown between the early *Peas* if there is a scarcity of autumn-sown; if not, defer sowing a week or a fortnight longer. Sow some seed of the Early Dutch *Turnip* on a slight hotbed; or where the soil is light and dry, a sowing may be made on a warm border. See to the due preparation of ground for crops in general, but beware of carrying on operations when the soil is in a wet state. Better be a fortnight too late with any given crop.

FRUIT GARDEN.

Where there are inferior sorts of Apples and Pears, or too many of one sort, prepare scions of superior varieties for grafting, and keep them till wanted in a cool situation.

FLOWER GARDEN.

As soon as the ground is a little dried after the frost and snow, it will be a good plan to have all the vacant beds in the flower garden forked over, so as to get the soil properly pulverised prior to planting-out the autumn-sown annuals. Preparation must also be made for a general sowing of the more hardy kinds, such as Larkspurs, Godetias, Clarkias, Nemophilas, &c., which should be made the first day the ground is sufficiently dry to admit of sowing them. Proceed with the pruning of shrubs and common Roses, but leave the more tender kinds until you are sure they will not be injured by frost. The most tender of the Chinese varieties that were covered with leaves in autumn are in excellent condition. See that the plants in the reserve garden are not thrown out of the ground by the late frost. If they are loose, fasten them. Proceed with planting-out biennials as soon as the ground is in a fit state, and prepare a little ground in a warm corner for sowing Stocks and some of the best of the annuals for transplanting. As a matter of course, all floricultural calendars must to a certain extent be acted on only as the weather is favourable for the operations there detailed as necessary. During spring and summer the experienced florist finds it comparatively easy to point out the previous week what is requisite to be done the ensuing one, but at this uncertain season we must be guided by circumstances. Whilst writing, the frost and snow appear to be rapidly disappearing; it will therefore cause the florist to be on the alert. If the weather continue mild draw the lights completely off the *Auricula* frames during the day. Examine the plants minutely, and see the soil is going

on well. Should any mild rain fall during the week they will be benefited by a good sprinkling in the middle of the day. When the lights are drawn on tilt them, so that the grass may become as dry as possible before night. These observations will apply to Carnations, and carefully remove all spotted or diseased leaves. Still cover Tulips with sand as they appear. Should the beds get sufficiently dry, the Ranunculuses should immediately be planted. Strike *Dahlia* cuttings in moist heat as they get long enough. As before observed, see that all planting is completed forthwith. Improve as much as possible outlines of every kind. Plant fresh masses or groups where necessary, and introduce specimen plants where fitting opportunities offer. Much mischief is done by planting single specimens in recesses; these should be carefully preserved, as a general rule, to give deep shadows and to throw the prominent features into bold relief.

GREENHOUSE AND CONSERVATORY.

Collect at the proper season for doing so a goodly store of the various sorts of soil ready for a future season. Loam, peat, and vegetable mould should be stacked a year at least in the compost-yard before being used for potting. I have seen plants greatly injured by being potted in fresh-cut soil. The conservatory should now be full of interest, and ought, where much attention is paid to flowers, to be quite as gay as at any other period of the year. Camellias done blooming should, if possible, be removed to some warm house where a moist atmosphere and a temperature averaging 65° will induce them to produce wood freely, shading them, should the weather become bright, for a few hours in the middle of the day; under such treatment the leaves get well developed, large, and healthy. The plants may also be watered occasionally with weak liquid manure. Climbers should now have a thorough dressing, cutting away all weak and decayed wood, and shortening where necessary to furnish back wood previous to the growing season. The advantage of increased solar light and heat will be rendered apparent by the increased brilliancy of colour in the flowers and the depth of verdure in the leaves, provided a judicious admission of air and a just proportion of other essentials be continued. The display of flowering plants in the conservatory may receive additions from various quarters. The stove will afford the beautiful *Euphorbia jacquiniæflora*, which may be removed without injury; the pits should long afford a supply of *Cinerarias*; the Heath house, too, may contribute. Fragrance is a quality always sought for in flowers; the most striking are too often deficient in that recommendation. In effecting an arrangement this must not be forgotten: however humble in appearance, the modest *Mignonette* will always be valued for its delicious fragrance. Possibly water will be required more frequently, but still administer it with care. Remedy defects in drainage in long-potted plants. Shift *Calceolarias*; repress green fly. A temperature varying between 50° and 60° in bright weather will easily be sustained.

PITS AND FRAMES.

The plants they contain should now be worked over; remove the moss that may have accumulated on the surface of the soil in the pots; draw the lights off every mild day to dry the plants. Begin, if not already done, propagating summer-flowering plants, such as *Verbenas*, *Salvias*, &c., that will afford cuttings.—W. KEANE.

DOINGS OF THE LAST WEEK.

THE comparative highness of the barometer on the evening of the 1st inst., when we last wrote, did not lead us to expect such a fall of snow on the following days. Although that has been much lessened, still the snow remains with us, and the slight frosts of the morning, with easterly and northerly winds, prevent its total disappearance. This has to some extent put a stop to active employment on many kinds of out-door work.

The snow lying on the ground was of great advantage to many crops in the coldest night we have yet had—crops made rather tender by the previous dull, warm, moist weather. Many subjects also under glass received the benefit of the snow covering where there was no artificial heat. For instance, *Calceolarias* have had a snow covering over them for a week, and will, probably, not be uncovered until all the snow is gone. Some *Czar Violets* we uncovered to-day, after they had been covered with glass and snow for eight days, and the blooms were as sweet and nice as if the sun had played on them for hours yesterday.

Covering from Frost.—Cauliflowers under hand-lights have had a sprinkling of litter over them all the week. What would have been the use of taking away the litter with its sprinkling of snow, when for the week there was scarcely a gleam of sunshine? The only thing to be cared for in this continuous covering is to be sure that the plants are in such a safe but low temperature that there shall be no stimulus presented to them to grow and elongate.

We had acted on this principle for years before we saw it advocated by our late clear-headed practical coadjutor Mr.

Errington. We have seen men employed whole days in uncovering cold pits to give them a little light in cold, frosty, dull weather in midwinter, and then begin to cover up again as soon as they were uncovered. If the plants were safe, and at a low temperature, the daily work of uncovering might have been saved. When there is only a little litter it may be of importance to shake it up instead of removing it, as every shaking-up would present a new line of radiation, and as often as that line was broken, frost and heat alike would have to begin their efforts anew. When we have a covering of snow we have so long regarded it as one of the best we could have, that in the case of cold pits and frames we are always loth to remove it, more especially as it is hardly possible to replace it. But for this consideration we might have swept off ours in the middle of the week. A few inches of snow will keep out a keen frost. The looser the snow is, the more effectual it will be. When from sun or a shower the surface has been solidified, it becomes then a better conductor of heat and cold, and we have often settled that matter and brought it back to its normal state by breaking the firm surface with the teeth of a rake. A great many of these homely matters have been lost sight of in gardening, because all accelerating is so easily done by hot-water pipes; but if hot water is to be obtained from coal at from 45s. to 50s. per ton, even proprietors far from poor may come to see the necessity of getting as much as they can without the aid of coal heat at such an enormous price.

Cleaning Stone Pathways.—Besides the matters referred to last week, we have expended much labour in scrubbing and cleaning the stone flooring in plant-corridors and conservatories. The greater the heat, and the more the moisture used, the more likely the stones to be encrusted with green. In small places the cleaning is often left to the housemaids. In many cases the cleaning is not cleaning at all, but a daubing-over with a layer of whitening, made regular with cloth and brush, which does not look so much amiss until it is damped, or a lady with a long-skirted black dress passes along and gets the dress encrusted with the whitening. There are two things here we have no faith in. First, the daubing-up of nice stonework with whitening or limewash, so as to resemble the doorsteps of town or villa residences; and secondly, where there is much of such work, in having housemaids or other women to do it in gardens, or even to attempt to clean the stone and leave it with its natural appearance. This is work which is more suited for, and will be done better by young garden labourers. We have had even the whitening process done more elegantly and regularly by men than we have ever seen it done by women; and as to scrubbing-off the green, there is no comparison—in fact, it is such work that we would not care to see a woman at.

For scrubbing stonework we chiefly use a little sand, hot weak soap water, scrubbing brushes, and house flannel to dry all up, and a very little practice enables the man, if young, to do the work very well indeed. We greatly prefer the natural appearance of the clean flagstone, tiles, &c., to any daubing that can be given to them. When they are thus cleaned the finest dress will not be soiled as when whitened or whitening-rubbed. There is no reason why comfort should be lost sight of—the comfort of warm water, and more especially as, after a little soaking, the warm water will enable the workman to clean the stones better, and the warmer the water after the cloth has passed over them in the drying-up process, the sooner will the stones be bright and dry. We have had to wash plant pots with ice in the water; but what was or could be the benefit of it? The pots could not be made so thoroughly clean, and they were long in drying. In the cleaning of stones, in addition to the warm water, scrubbing-brush, and flannel to clean all up by wringing in a pail, we would depend on active scrubbing, as, if there is a little soap dissolved in the water, it must be only a little; and, contrary to general practice, we say, Never rub soap on the brush, as it only clogs it up, and prevents its acting on the stone.

In cleaning stone we have used salt, soda, and other easy victors of the green, and the result is, we would say to our readers, "Don't." Unless the stone is very peculiarly hard, all such saline ingredients, though they remove rather easily the green coating, will be apt to leave an eating inflorescence on the stone that will give a flowery appearance on the surface for months afterwards, and continue to wear it out. On this account it is not advisable to use such saline matters for cleaning stone in corridors and conservatories. We would even decline to use such helps for cleaning out-door stonework, where after-results are to be considered. We have known some stones, a little soft, show this wearing-out flowery appearance on the surface for a twelvemonth afterwards. Stone pathways, out of doors and in corridors and conservatories, look well when kept clean; and, as hinted above, we think they are best every way when of their natural colour, and not daubed over with dirt and filth cover-alls.

Heating.—Next to stoves in a small house, the cheapest mode of heating is by a flue; and the neatest mode of doing this, though not getting quite so much heat, is to have the flue not above, but under the floor level, the top of the flue forming

part of the pathway, no flue or mode of heating thus presenting itself, whilst the warmed pathway is very agreeable in cold weather. In a house of considerable size, or even houses to be heated by hot water, and where in these dear coal days it is desirable to make as much of the heat from the fire as possible, then a flue should proceed through the house, or make turns in the back wall, before going directly from the boiler up the chimney, with nothing to keep the heat from wasting except a damper. We thus had a large conservatory heated when coals had to be carted fourteen or sixteen miles, and the flue was almost as useful as the hot water.

In the case of flues alone, it is as well if there be no dips from the furnace to the chimney, as the more and deeper the dips, under paths, &c., the more height will be required for the chimney. But failures in heating, and smoky and too-much-heated stokeholes, do not proceed so much from such a cause as from inattention to two or three simple matters. First, make sure that the iron bars of your furnace are from 18 to 24 inches—30 inches if you can go down conveniently—below the level of the bottom of the flue. Secondly, we have no objection to a fair length of a furnace, but do not have much of a dead rest, say not more than 6 or 8 inches, at the farther end; the grating bars of the furnace going pretty well up to the extreme end of the furnace. Thirdly, what rest you have should be in the shape of a stout iron plate, half an inch thick, and from 8 to 12 inches in length, close to the furnace door. From want of attention to these matters there is often a want of draught, suffocating back smoke in the stokehole, a red burning heat at the furnace door, and a much higher temperature in the stokehole than could by any means be got in the house. In a number of cases, of nice though small houses, that have within a few years come under our notice, the evils could chiefly be traced to the desire of saving in these cheap days, so as to dispense with the dumb iron plate inside the furnace door. The cheapness was thoroughly neutralised in some of the cases by the framework and furnace door being burned by their closeness to furnace bars. We have seen the furnace doors gleaming red with but little heat in the flue, as the cold fuel on the long rest at the farther end arrested free draught, and sent the heat and smoke back to the stokehole. Let the rest be at the furnace door, and the fresh fuel put next the door will be gradually heated; and the hottest fuel, being beneath the bars at the farther end, there will be no back smoke, and little smoke at all, for that will be burned up. In many cases where such changes have been made, we are assured that now all goes right, and that more heat is obtained in the house with half the quantity of fuel. People should act as if they wished to heat their house and not the stokehole. The great evil of having many boilers is, that unless the firing and the damper are carefully applied, much heat goes up the chimney to warm the general atmosphere.

The same simple principles apply to furnaces under boilers. We happen to know of several cases of boiler-heating where the close-cutting system so ruled that there was no dumb iron plate next the furnace door, but the furnace bars came close up to the door, and there was a large, long, dead rest at the farther end. We say nothing of the discomforts; we feel sure that, so far as ultimate wear and tear are concerned, the trifling saving will be a penny-wise-and-pound-foolish affair.

One case has come very prominently under our notice—a conservatory, such as we have noticed above, heated by a boiler, and the flue from the boiler having several turns in the back wall. Sometimes on commencing firing in winter it was found necessary to light a small fire at a soot door in the flue to dry it a little, and then there was no difficulty for the season. It was desirable to make the boiler do more work, and, as it was old, a new one was put in at once. From circumstances we need not mention the work was not superintended as it ought to have been, and the furnace bars were brought close to the furnace feeding-door, consequently a long dead rest was left at the farther end. Pity a chimney-sweeper injured to smoke who should be condemned to stay a few minutes in that stokehole after the fire was lighted! The finest coke could be made to burn in a certain way, but not so as to heat the water or heat the flue properly, though the furnace door would become pretty well red hot. There was a thought of taking the shaft from the furnace to the chimney at once without going a long length—some 80 feet at least—through the flue; but a fire placed in a soot-opening of the flue burned nicely, yet still the furnace beneath the boiler was a perfect abomination and martyrdom to all concerned. Well, what was done? Neither boiler nor flue was touched, but as much of the boiler-setting was taken down as permitted of some 15 inches of the dead rest being removed at the farther end, the furnace iron grating-bars moved all that closer to the end of the furnace, and a dead plate of the same size, from 12 to 15 inches, placed next the furnace doors; now there is not the least trouble with smoke, &c., and the draught through the long flue is so good that, to prevent the lower range of flue becoming too hot, it is necessary often to use a damper. We feel convinced that many who are in diffi-

culties about their furnaces may obtain relief by attending to one or more of these simple matters.—R. F.

TRADE CATALOGUES RECEIVED.

S. Dixon & Co., 48A, Moorgate Street, London, E.C.—*Select List of Vegetable and Flower Seeds, &c.*

Downie, Laird, & Laing, Stanstead Park, Forest Hill, London, S.E., and 17, South Frederick Street, Edinburgh.—*Descriptive Catalogue of Garden, Flower, and Agricultural Seeds, Implements, &c.*

John Harrison, Darlington.—*Descriptive Catalogue of Fruit Trees, Hardy Ornamental Trees, and Shrubs.—Descriptive Catalogue of Roses and Hollyhocks.—Descriptive Catalogue of Vegetable and Flower Seeds, Bedding Plants, &c.—Trade List of Conifers, Ornamental Trees, Shrubs, Fruit Trees, &c.*

TO CORRESPONDENTS.

*. We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

GARDENERS' YEAR-BOOK (*Senex*).—We are greatly obliged to you for calling attention to the errors; where there is such a mass of figures it is not easy to avoid them, and it is only when practical use is made of the tables that such errors are discovered. We shall see about the other matters.

BACK NUMBERS (*A Constant Subscriber*).—You can have the two numbers you name.

IVY (*E. and J. P.*).—We have seen the variety before, and have spoken of it as the Copper-coloured Irish Ivy.

LINNEAN SOCIETY (*G. James*).—The entry in the almanack you mention is the hour at which the Society meets. It is purely for natural history. Put gold fish in the aquarium. No Fern would grow in the water; you must place aquatic plants there. Write questions for our different departments on separate papers.

DISEASED LARCH (*R. J. S.*).—The specimen sent is severely cankered, probably caused by the soil.

MEADOW LAND INJURED BY TOO FREQUENT MOWING (*Sussex*).—Do not sow "hay-seed," for it is mingled with seeds of weeds. Buy a mixture of grass seeds of seedsmen who advertise in our columns. Tell them the nature of the soil, and they will send you the most suitable species. Sow early in the next month, and bush-harrow.

ORCHIDS FOR SALE (*An Old Subscriber*).—Advertise them, stating names and prices.

LEEK SEED (*Inquirer*).—We know of no other mode of selling it than offering it to some of the wholesale seedsmen. We know nothing of the wholesale price.

OVERSHADOWING TREE (*W. G. D.*).—An action on the case is maintainable against the owner of a tree the branches of which injuriously overhang a neighbour's ground; but there are various circumstances to be known before that course could be advised. Consult your solicitor.

WORMCASTS ON LAWN (*Cesar*).—Water the lawn once a week with lime water.

CROWFOOT (*R. M.*).—The Crowfoot is more likely to "smother" the Cabbages than the Cabbages to smother the Crowfoot. The roots of the latter should have been forked out of the soil.

ERECTING A GREEKHORSE (*Z. A.*).—We cannot recommend any builder. Write to some of those who advertise in our columns, and tell them exactly what you require.

RAINFALL IN CUMBERLAND.—In the quotation of Mr. Fletcher's remarks at page 124 respecting the rainfall on the Sty, for "nearly 25 inches" read "nearly 22½ inches."

RHAMNUS FRANGULA.—"I am anxious to plant some quantity of Rhamnus Frangula, Berry-bearing Alder. This is said by London to be preferred by makers of gunpowder to all other charcoal. I have ordered it of two nurserymen, but without success. It is, I believe, very common in Germany, but I am quite at a loss where to procure plants.—J. P., of York." [We shall be obliged by any correspondent replying to this.]

FRUIT TREE BLOSSOM (*A Young Beginner*).—The blossom is inside the fruit.

CYCLAMEN PERSICUM FAILING (*W. H. W.*).—We are unable to account for the failure of the Cyclamen; probably it has been kept too wet and cold. With flower-buds and abundance of leaves showing, the plant must have received a sudden and severe check to have caused nearly all the buds and leaves to go off. Probably the soil is unsuitable, or the watering has been given directly on the crown of the corn, causing the leaves and buds to die-off at the surface of the soil. The temperature in winter for plants advanced for bloom should be 45° at night, and 50° by day. The failure of the Azalea we should attribute to the soil, which is wholly unsuitable; and we fear you water, or pour the water in watering, on the neck or collar of the

plant, which, from being kept constantly wet, causes it to decay. The peat should be taken from high ground, not from a low boggy place.

PROPAGATING AZALEAS (*M. B.*).—They are increased by cuttings, taking off the young shoots when 3 or 4 inches long. Cut below a joint, remove the lower leaves from two-thirds the length of the cuttings, and insert in pots rather thickly up to the leaves, the pots being well drained, and filled to within an inch of the rim with sandy peat, and to the rim with silver sand. Water gently, and set them in a house with a temperature of 60° to 65°, shading from sun, and keeping moist. The cuttings should be covered with a hand-glass made to fit within the rim of the pot, or the pot may be inserted in one of larger size, filling up the interval with moss, surfacing with silver sand, on which the bell-glass is to rest. When the cuttings are rooted remove them to a cooler house or greenhouse, take off the bell-glasses every night, replacing in the day, and after a fortnight of this they may be potted-off singly in 3-inch pots, placed in a frame and kept close, and shaded until they are established, then harden them off, and remove them to the greenhouse.

HYACINTHS AFTER FLOWERING (*Idem*).—Place them in a cold frame, and when the weather becomes more mild plant them out-doors with the balls entire. They are not worth forcing a second year, but in the borders they flower in spring, and are useful for cutting from.

HARDY RIDGE MELON TREATMENT (*Idem*).—Sow the seeds about the middle of April, place in a hothed, and when the plants are showing the rough leaf pot off singly in 4-inch pots. When they have two rough leaves take out the point of the shoots, and harden off, planting out about the middle of May on hills in a warm sunny exposure. Take out a hole or trench about 2 feet wide, and a spade deep, and place in this 18 inches deep of hot fermenting materials, and on this the soil taken from the trench 10 inches deep, forming into hills slightly raised at every 3 feet, and cover with a hand-glass. When the soil is warmed put out a plant on each hill, and after watering gently, cover with the bell-glass. The lights will need to be tilted a few inches on the sunny side when the days are bright, closing at night. When the plants are advanced so that the shoots reach the sides of the hand-lights, raise the latter by bricks placed under the corners, to allow of the shoots running outside, and after the end of June the hand-glasses may be removed altogether. Water copiously in dry weather. Achaesporrischer is probably the best hardy ridge kind of Melon.

GRAFTING CAMELLIAS AND ROSES (*Idem*).—The best time to graft Camellias is in September or the early part of February, covering them, after grafting, with a hand-glass. The plants should be placed on ashes on a firm bottom, and the lights should be brushed over with a thin size of whitening and milk. Keep on the lights until they begin to grow, then remove them gradually. Tongue-grafting is the most suitable, using grafting-wax in place of clay. The present is the best time to graft Roses. The stocks, after having been established in pots a year, should be brought in-doors and grafted, using the cuttings of wood of last year. It is sufficient if the grafts have two eyes. Graft about an inch above the soil, and place the worked plants in a house with a temperature of 50° to 55°. Side-grafting without the tongue is most suitable. Keep close and moist, and they will grow away freely. Use grafting-wax, and cotton for binding. Harden well off when they have grown from 4 to 6 inches.

PRUNING PEACH TREES IN COOL HOUSES (*H. H.*).—Peach trees in a cool house may now be pruned though pushing. It will not do the trees the least injury, either on the score of bleeding or from the cuts. Peach trees do not bleed like Vines when late-pruned.

BEGONIAS FAILING (*S. D. A.*).—We should say the plants are old and weak, the soil in a sour state, and the roots very unhealthy. We should give them more heat, and repot them, removing most of the old soil, and the old shoots if there are any fresh ones coming from the base. The plants may flower in the early part of summer, but in April we should put in cuttings of the strong young shoots, which will soon strike root in a gentle bottom heat, or in a Cucurbit frame; and if their growth be encouraged throughout the summer, they will make very much finer plants for winter-flowering than the old plants, which after a year's flowering ought not to be kept. The temperature you name is too low for their growing and flowering in winter. The temperature at night should be 50° to 55°, and 60° to 65° by day, with a rise from sun heat with air.

CONSERVATORY PLANTS INJURED (*A Constant Reader*).—There must have been something more than ordinary oil paint used for the conservatory, or it would not have done the mischief you describe. We have had houses painted both the colours you name, and have not experienced any injury to the plants. Perhaps the plants were put in the house before the paint was thoroughly dried. Had this not been the case, and air been given day and night, we do not think the plants would have suffered; but there may have been some ingredient used in the paint causing the mischief you complain of. We are unable to throw any light on the subject, and we do not think you minded matters by placing vinegar in saucers.

MELON BED LINING (*J. H. B.*).—In lining the Melon bed it is not necessary to remove any part of the old dung of the bed, but place the lining on the old materials, which will settle, and this, along with raising the frame, will give you sufficient space for linings. Bring the dung up level with the under side of the lights, but so that they can be moved freely up or down. You will need to lie front, back, and both ends of the bed.

CELERY PRICKING-OUT (*Idem*).—The Celery may be sown at the end of February, or early in March. The latter period is to be preferred if you only make one sowing. Place the pans in a gentle heat, as that of a hothed, and encourage growth in a house, keeping the seedlings near the glass to prevent their becoming drawn-up. They should be hardened off after they show one rough leaf, by placing them out of doors in the day, and in a frame or house at night; and after about a fortnight of this treatment they will be showing the second rough leaf, and be fit to prick-out early in May on a warm south border, the ground being made rich and light with well-rotted manure or leaf soil, or both. After pricking-out, the bed will need to be kept well watered, and shaded from sun by mats on sticks hooped over the bed, giving the same protection at night if frosty. When the plants are growing freely, withdraw the mats, using them only as shade from sun until they are established, or to protect from frost at night, at other times exposing fully.

WEIGHT OF 21-OZ. GLASS (*John Smith*).—Why not weigh several feet of 21-oz. glass and take the average of the net weight? You could easily get, and we could easily give, the weight of 2000 times 21-oz., but that would not be the exact weight of the glass unless it were very much alike. We have found 21-oz. glass in some cases fully 22 ounces, whilst we have found some not more than 19 ounces. The best samples will be the most uniform, but the best will not always average 21 ounces.

TREATMENT OF VINES (G. B. R.).—The outside border, in which a portion of the roots of your Vines are, should have been covered with some fermenting material at the time the house was started. You had better put on a sufficient depth of leaves or other litter to cause a gentle heat. To have the Grapes ripe in June, a nearly uniform night temperature of 65° should be kept up, letting the house rise by day to 70°, or with sun heat to 75°. We never syringe the Vines after the buds have started freely. A moist atmosphere is maintained by syringing or sprinkling the paths and surface of the borders twice a day, and also from troughs fixed or cast on the hot-water pipes. Whilst the Grapes are in flower the evaporating troughs should be dry, and a rather higher temperature ought to be kept up. As soon as the flowering period is over the troughs should be again supplied with water, and a night temperature of 65° be kept up until the Grapes show signs of colouring.

GRAFTING VINES (A Constant Reader).—The best time to graft Vines is when the young shoots have grown 2 or 3 inches. The grafts should have been previously started into growth to the extent of about half an inch.

FRUITING ERIOBOTRYA JAPONICA (Idem).—We do not think your seedling plant will fruit in an 11-inch pot. It should be grafted on the Whitethorn. You might still retain your seedling plant, but we advise you to graft one if you wish to fruit it.

CAMELLIA FLOWER-BUDS FALLING (Monitor).—Most likely the falling-off of the Camellia buds is owing to an unhealthy state of the roots. This will also take place from the roots being too dry or too moist, especially in such weather as we have had of late. There is another cause more fatal—escape from gas-pipes; but that had been the case the point of the bud would have suffered first, whilst yours is quite healthy. Our experience would say, on no account admit gas pipes into plant houses. The mere burning of the gas is bad enough, but it is nothing compared to having conducting pipes passing through the houses. Hardly any joint will prevent bad impure gas from escaping.

CHANGING FLUE TO STOVE (H. A.).—We say in your case, let well alone. As the flue is there keep it there, at least for the present. You need not waste room by your flue, as you could have a shelf or trellis-table over it. The slowness with which the flue heats may depend on the thickness of the flue or the arrangement of the furnace. In the latter case there is often much waste of heat by having the fire-bars close to the furnace-door. There ought to be a dumb-plate next the door of from 9 to 12 inches wide. Without that, much of the heat goes to the stovehole instead of along the flue. The flue, having so much larger a surface, will keep the heat longer than a mere stove, but the keeping-up the heat for a long time with little fuel depends very much on keeping the furnace-door and ashpit-door shut, with just the smallest opening in the latter to admit a very little air. Whenever we see a furnace-door open after the fire is set going, it always speaks to us of waste, though sometimes in emergencies that must be submitted to, as the cold air passing over the glowing fuel cools it, cools the boiler, cools the flue, &c. What air is required for combustion of fuel—we pass over combustion of smoke—ought to come through the grate sashbars, and the draught must be regulated there. One reason why we advise you to keep your flue for the present, is simply that a brick stove in your small house if made now, would have to stand the best part of a month before you could give it a chance to be used fairly. However, if you resort to the usual mode of preventing dust, a small brick stove would heat your little house, 8 by 10 feet, admirably, and you could do all the attendance inside. When you speak of a stove 9 inches square we presume you mean the firebox lined with firebrick. The rest of the stove may be built of good bricks—say 28 inches square, and 36 inches in height. The regulation of the draught at the ashpit-door will enable you to keep most of the heat in the bricks.

SYNONYMS (A. C.).—Eritrichum is the same as Myosotis. Xiphion tingitanum was discovered near Tangiers in 1825, and figured and described in the "Botanical Magazine" of August last. Hyacinthus caudicatus is figured in Mr. Wilson Saunders' "Refugium Botanicum." It is a Cape bulb requiring a greenhouse temperature.

FLOWERING BOUGAINVILLEA GLABRA IN JUNE (A Young Plantman).—Keep the plant dry, and about the middle of March start it in gentle heat, giving it the benefit of a tan bed or other bottom heat. Repot the plant previously if it is needed, and do what pruning is required. This should be confined to cutting out the old shoots and removing the unripe portions of the young shoots. These, we presume, are ripe and hard; if not, the chance of flowering is small. The bottom heat should be 75°, the top heat 55° to 60° at night, increasing to 60° or 65° at night in about a month, with a rise by day of 5° to 10°, and 15° to 20° with sun and abundance of air. Shift the plant into its blooming pot in April, and early in May it will have made a good growth. Keep it fully exposed to light, and do not let the soil become so dry as to affect the foliage, and it will very probably show flower. It will then need to be forwarded with plenty of heat and a moist atmosphere, not, however, syringing overhead. If likely to flower too early, place it in a house with a lower temperature, and afford more heat if it appear to be backward.

FLOWERING MEDINILLA MAGNIFICA IN JUNE (Idem).—The plant should be kept moderately dry up to the middle of April, and then moisture, and this will soon cause the swelling of the flower-buds, which come from the base of the leaves at the point of last year's growth. The plant, if not in a small pot, need not be repotted; but, if necessary, this may be done, and in the temperature above named it will flower at the time you wish, though if it show for bloom earlier it must be retarded by placing it in a lower temperature. To have plants in flower at a stated time requires the exercise of considerable judgment, much depending on the condition of the plants.

GERANIUM LEAVES SPOTTED (S. M. H.).—The leaves are spotted with mildew, due, we think, to the plant having been kept in a moist and ill-ventilated atmosphere with a low temperature. Give more air, and if you cannot give more heat without interfering with the well-doing of other plants, keep it drier at the roots. More heat with air would be the best remedy. With brighter weather the plant will outgrow the evil. We are not quite sure of the name, but we think it is *Pillar of Beauty*.

HAND-DRILL (A. B. G.).—That advertised in our columns, called *Le Butt's*, would suit you.

NAMES OF PLANTS (Mac).—We are willing to name your Mosses, but you will gain far more knowledge if you work them out for yourself. Your No. 1, for example (*Polytrichum commune*), could very readily be determined; 2, *Racomitrium aciculare*; 3, *Leskea sericea*; 4, *Hypnum complanatum*. (*B. E.*)—1, *Pteris cretica*; 2, *Nephrolepis exaltata*; 3, *Selaginella Braunii*. (*C. H. A.*)—1, *Gymnogramma ochracea*; 2, *Nephrolepis cordifolia*; 3, *Adiantum formosum*; 4, *A. thibeticum*; 5 and 6, Indeterminable. (*J. T.*)—1, *Coccoloba platyclada*; 2 and 3, *Adiantum hispidulum*. (*S. M. H.*)—Indeterminable.

POULTRY, BEE, AND PIGEON CHRONICLE.

EFFERVESCING AND OTHER BRITISH WINES.

A CORRESPONDENT, a few weeks since, requested to be informed how to make effervescing rhubarb wine. I have waited in trust that some other person, more experienced than myself, would send you the desired information. Finding this up to the present not to be the case, allow me to refer you back to No. 429, page 409, where you will find my minutiae of manufacture. One cannot invent new processes or produce fresh objects of sustenance under long periods of time—at least I cannot; and I have nothing to take away from the advice referred to, and but little to add to it, further than that I have recently been in correspondence with an enthusiastic amateur British wine-maker, who informs me he has lately made a compound infusion of pineapple and elder flowers for flavouring and giving bouquet to some of his wines. I should think it would! In the days when I confined myself to rhubarb wine, I used to submerge dried elder flowers in the barrel as soon as it had done working, and the wine was racked of its first grounds, when the wine was allowed to qualify-off the crude first flavour of the flowers by standing in the barrel a couple of years before it was bottled. Those monks of some monastery or other on the Swiss borders, who (secretly) gained centuries of applause for their peculiar "brand," by merely adapting the elderflower flavouring to their wines, might have smacked their lips with envy on the discussion of a bottle of my simple home-made. But keeping the wine so long in the cask destroys the effervescing quality. What I have been trying to attain since I last wrote on this subject, is to give a proper champagne tint to my effervescing rhubarb and gooseberry wine. I cannot master it, try what I may, by logwood, cochineal, &c., for the tint will ripen off more or less of a pale or dark sherry shade, instead of a faint pale violet, or Madame Rivers Rose-colour. Perhaps some of your clever coadjutors could enlighten us on our way; for the above wine with a proper tint would be an acquisition worth knowing ament a "Veuve Cliquot," or somebody or other's "reviver." Last season I made a gallon of colouring juice from those little black cherries usually so plentifully hawked about—Polsted cherries they call them in my county, Suffolk—and added it to thirty gallons of rhubarb and gooseberry wine, but with no better success than with the drugs. I have also tried highly-coloured Esperione Grape and other wines, and other liquids which I am now going to mention in connection with my grape wine, all to no purpose, and I fear I must give it up and stick to dame Nature's natural appearances in the matter.

Now I am upon the subject of home-made wine, if I do not touch upon what I have been doing in progress with my paper, it would be something like the play of Hamlet with the character of Hamlet left out.

I have taken to add one-third in proportion of the Muscat of Alexandria grown on the open walls to two-thirds of Royal Muscadine Grapes as an effervescing grape wine—a great improvement indeed upon the wine made totally from the Muscadines. It does away with the peculiar smoky twang attached to the latter grape in its ripeness, and which never loses itself in the *boni fide* wine.

Last year and the year before my Esperione Grapes did not colour well, though quite sufficiently so for an effervescing pink champagne; but we prefer our Esperione as drawn from the wood two or three years in cask, and of a good porty colour. Well, two years ago I was looking over my seedling potatoes at Bedford, and side by side with them was a nursery plantation of the broad holly-leaved berberis, loaded with its handsome bunches of blue-black berries, on which the birds were carousing. I had a suspicion my Esperiones would not be up to their mark of colour by the next vintage time, and it struck me forcibly that those berries could be utilised as a colouring matter for the wine. A consultation with Mr. Alex. Dean soon decided that some should be sent to me, and Mr. Dean has favourably impressed our honourable and reliable Fruit Committee on the feasibility of their concoction into excellent jam. I made two gallons of colouring juice from the berberis, just as I proceed in working the juice of the Grape, and put it to thirty gallons of the Esperione wine after its first racking-off, and I find it makes a splendid colouring for it, and adds also to the bouquet. This is a first-rate idea for your wine-making subscribers, and the berberis wine, as we may call it, is really very nice and palatable of itself. I have again this season made two gallons of it to add to thirty gallons of my Esperione. Last year I also made three gallons of ripe elderberry juice, and worked it exactly as for my other wines as a colouring matter for the Esperione. I added it to thirty gallons of the latter, when the fermentation had nearly ceased. It has given it a fine colour indeed, but, as in the case of the elder flowers submerged in the rhubarb wine, an elder smack maintains itself too strongly to be agreeable at present. I hope time will rectify the crudity as in the case of the elder flowers,

for elder berries could always be a comeatable colouring matter for unripe black Grape wine for those who have high-coloured notions.

My 1872 vintage occurred on November 7th, a very good produce for the season; the Royal Muscadine keeping up its character for ripening best, and the Muscat of Alexandria, curious to say, ripened better than in 1871; but the Esperiones were less coloured than I ever remembered to have seen them, and they did not meet their usual weight by 50 lbs. So, on the recommendation of my correspondent above quoted, I was induced to weigh the water with sugar before I put it to the must (according with the practice of many foreign vintage districts, where the extraction of Grape acid to the uttermost is considered of more consequence for wine-making than the ripening of the Grapes) after this manner:—As soon as the juice of the first must had fermented and was pressed off, I divided the quantity of sugar required for the whole, and put half of it to the run-off juice, and then dissolved the other part in the quantum of water required, well stirring it amongst the skins, pressed it off when it had arrived at a state of strong fermentation, and at once added it to the first run-off juice in the working pan. I am informed they ferment the skins in this manner, "four or five times over" abroad, in their immense vats. I was content with "three draws," the last made by mixing the skins of the white and black Grapes together in the mash, with sugared water in the proportion of 2½ lbs. of sugar per gallon; thus I gained eighteen gallons more from the musts than I should have done by my usual method. The result I shall keep separate as an effervescing *petit vin*, to be drunk as a household table beverage during, I hope, hot thirsty weather next summer. I like this previously-sugared-water-for-the-must plan, and, please the Fates, I shall adopt it in the future, for, besides facilitating in several particulars soon acknowledged by the workers, the working processes of the wines themselves follow out more satisfactorily and expeditiously.

My last season's wines both red and white, sixty gallons, promise to become very good, and the *petit vin* is quite beyond my expectation.

Since 1865, No. 235, page 259, I have sent you no annual specific gravities of my Grape juices. Perhaps for the benefit of your recent wine-manufacturing subscribers and Grape-eaters in general, you may think it sufficiently interesting to tabulate the degrees of sweetness that the Grapes I cultivated out of doors have arrived at during the fifteen years that I have fermented their juice. I suppose the universally-liked Black Hamburgs would arrive at about the same degree of perfection in ripening out of doors as the Esperione, but the latter is by far the best maker of wine, and of course I do not cultivate the Muscat of Alexandria as an out-of-door ripener, but merely for the sake of giving a prettier flavour to the Muscadine wine. About 21° is a palatable ripeness in a bunch of Grapes, so you will see how the Royal Muscadine comes off with great credit in that respect in this midland county, Oxfordshire; but for the matter of latitude I believe it would ripen equally well in the College garden at Elgin, N.B. I know about twenty years ago I ate excellent large ruddy-checked Peaches from the open walls there, far better than what I could ever hope to do from the open walls and soil of this garden at Woodstock.

SACCHAROMETER IN PURE JUICE.

Esperione Grapes.		Royal Muscadine.	
1858	21°	1859	22°
1859	20°	1860	Fruit came to nothing
1860	July 4th, Vines in blossom, fruit came to nothing	1861	17½°
1861	15°	1862	20°
1862	17°	1863	21½°
1863	19°	1864	22°
1864	20°	1865	18°
1865	22°	1866	22°
1866	19°	1867	21°
1867	18°	1868	20°
1868	17°	1869	21°
1869	20½°	1870	22°
1870	20°	1871	20°
1871	17°	1872	20°
1872	15°		
Royal Muscadine.		Muscat of Alexandria.	
1858	25°	1870	18°
		1871	13°
		1872	15°

—R. FENN.

MALAY FOWLS.

WHAT can be done to induce poultry committees to revise their lists of prizes so as to include the despised Malays? The fancy are much indebted to Mr. Brooke for calling attention from time to time to the injustice they receive. As an old-established breed of the very earliest date, no exhibition of poultry is complete without them; besides, they always command their share of notice from the visitors at shows. From my experience of committeemen we rely too much on the schedules of other shows, and I beg to suggest to those of the fancy, if living

in the neighbourhood of shows, to try what influence they have on committees.

I quite agree with Mr. Brooke about cups, they are about the most useless articles offered for prizes. I know a Bantam fancier who has more than a dozen cups, and the only use he has for them is to ornament the sideboard. Of late he won a cup, but the committee gave him the choice of either a cream-jug or the cup; the former was taken. And, by-the-by, this jug is always on the table at tea time, and it is natural for the better-halt to think better of poultry shows in future. Articles that can be brought on the table for use are the best, as at table is a good time to discuss the quality of the bird that won the victory.—HAWKINS.

[The reason why committees do not offer prizes for Malays is, that rarely are there a sufficient number of pens to pay the amount of the prizes. A good test would be to endeavour to obtain subscriptions for a special prize for Malays at a principal poultry show.—EDS.]

FAKENHAM AND WEST NORFOLK POULTRY SHOW.

THIS Show was held in the Corn Hall at Fakenham on the 4th and 5th inst. The building is one of the best to examine poultry in, the light from the dome-shaped roof being so well diffused. The pens (Turner's) were well disposed in double tiers, and the backs covered with calico.

In poultry the entries were very good, and for the most part the birds were in good order, and very few pens were too late for competition. An official feeder having been provided, the birds were well attended to. Among the *Dorking* cocks of the Dark-Grey variety there were some good birds, but others were very poor. In the Any other variety class of Dorkings there were only two Silver-Greys. The first-prize bird was nearly perfect; the owner also took the cup. The class for hens was perhaps one of the best in the Show, scarcely a bird being unworthy of notice. The first prize went to Silver-Grey, and the second to Dark Grey. In *Cochins* the cup was carried off by a grand old Buff cock; and the second prize in the same class was awarded to an excellent bird. In *Cochin* cocks of any other kind, a capital Partridge was first, and White second. *Cochin* hens were extremely good, and a large number of the birds received favourable notice, the first-prize Buff and second-prize White being birds that may be pronounced almost faultless. *Brahmas* were very good in both classes of Dark, the first position being gained only by a little superiority in the rise of the tail. There were several other birds especially noteworthy. In the hens also the competition was very close, the grand marking of the first-prize hen succeeding over the greater size of the second. Light *Brahmas* were not of high merit, though the winners were good in point of both marking and size; but the award in hens was an unaccountable mistake, the order of merit being the reverse of the prizes. *Game* were good, and the competition close in all classes. Brown Reds were first on the list in cocks, and a handsome close-feathered chicken stood first, and only lost the cup on account of a slight fault in the sickle feathers, which were a little too broad; the second was an adult bird in nice order. In Black-breasted Reds, also, a cockerel stood in the place of honour, and a capital cock was second; both birds being sound in colour and very good in hand. In *Game* cocks of any other breed, the first was a Duckwing cockerel of fine colour and style; and the second a marble-breasted Pile of very sound and hard appearance. The hens were, however, the best as a class, scarcely a faulty bird being shown. The first prize and cup were won by a handsome Brown Red hen, and the second prize by a capital Black-breasted Red pullet. With few exceptions the *Hamburgs* were very poor, the cause being, no doubt, the mixture of the classes, which always diminishes competition. In Spangled both pairs were Silver-spangled of fair quality; and in Pencilled the first were Golden-pencilled, the second Silver-pencilled, the cock in the first-named pen being the only good bird shown. The Black *Hamburgs*, which were allowed a class to themselves, were very much better, and the cup and county prize were awarded to the first-prize pair. *Spanish* were a fair lot, there being little choice between the first and second-prize pairs. *Polands* were extremely good, and the cup for the section was given to a splendid pair of Golden. The second prize was awarded to very good White-crested Blacks. *French* fowls were also pretty well represented, the first and county prize going to very good Crève-Cœurs, and the second to Houdans. Both the Selling classes were large, but the sales were not numerous.

Ducks were next. Aylesbury and Rouen were shown together, and their quality was pretty good. In the Variety class of Ducks, Black East Indians were first, and Carolinas second.

Bantams were numerous, but as classes they were not of the highest merit, though the winning pens were mostly of good quality. In the Red Game the first were old birds, nearly faultless; the second very good, but not nearly so short or close-feathered; while several other pens were noticeable for their

beauty of colour. The county prize was carried off by a very well-coloured pair of Brown Reds. In the Variety class of Game the first were Duckwings, the hen being very good and in nice bloom, but the cock rather dull in colour and low in condition. The second prize went to very good Piles. The class for Any other variety of Bantams was poor, but a very good pair of Golden Sebrights stood first. The best pen of birds (Blacks), were more dead than alive.

Turkeys and Geese were well shown, the birds being in the best of plumage and very large in frame.

Of **Rabbits** there were but two classes, and these contained twenty-six entries. The Lop-ears were a very good lot, and the winners as follows:—First, a Fawn buck, ears 2½ inches by 4½; and second a Grey-and-white doe, ears 2½ by 4½; although the longest-eared Rabbit in the Show was a pure White, shown by Messrs. Shaw and Allison, of Sheffield; and the most handsome one was a very young Tortoiseshell doe from the same exhibitors. In the Variety class a perfect Himalayan buck was first, and a Silver-Grey second. Several very good Angoras were highly commended.

For **Pigeons** there were not many classes, but it is seldom so few entries can count so many first-rate specimens. Carriers and Pouters were shown singly, and of any sex; and in the former class a Black cock won both prizes; the cup for the best pen in the Show going to the first, a well-developed bird. Whites won both prizes for Pouters, as also the county prize. In Barbs a young Red cock was first, and Black second; both being good in skull and cere. In Tumblers there was one class for Balts and another for Beards, and it is not often so good a collection of these varieties is seen. The first in Balts were Reds, nearly perfect in all points, and the second Blues; and in Beards these remarks will also apply, both pairs being, however, Blues, the first very beautiful in colour. In Tumblers of Any other variety all were Almonds, and little was the difference between the two winning pens. Fantails were also shown singly—a course to be recommended; and the whole of the birds were extremely good, though some of them will require to moult before they can win, the dirt being so thick upon their plumage. In the Variety class the first were Red Jacobins, and the second an enormous pair of Blue Runts.

Of **Cage Birds** there were some deserving specimens, especially along the Norwich.

DOBERINGS.—Coloured.—Cocks.—1, Mrs. R. C. Sapwell, Kensington. 2, W. Harvey, Sheffield. County, Mrs. Southwood, Fakenham. *hc*, Mrs. Southwood; F. Parlett, Chelmsford; Henry Lingwood, Barking; Needham Market; J. White, Warbury.

DOBERINGS.—Any other variety.—Cocks.—1 and Cup, Wren & Page, Lowestoft (Silver-Grey). 2 and County, T. & H. Heath, Norwich (Silver-Grey). *Hens*—1, Wren & Page (Silver-Grey). 2, Henry Lingwood (Coloured). County, Mrs. Southwood (Coloured). *hc*, Mrs. R. C. Sapwell (Coloured) (2); T. & H. Heath (Silver-Grey); Wren & Page (Silver-Grey); F. Parlett (Coloured); W. Harvey; J. White (Coloured); Mrs. Southwood (Coloured) (2).

COCHINS.—Cinnamon.—Buff.—Cocks.—1 and Cup, Lady Gwydyr, Ipswich. 2 and County, Major Bignold, Norwich. *hc*, J. S. Pearson, Great Melton (2); W. Bruton, East Dereham; Henry Lingwood (2). *c*, W. Harvey.

COCHINS.—Any other variety.—Cocks.—1, W. Harvey. 2, R. S. S. Woodgate (White). County, Major Bignold (Partridge); *hc*, Major Bignold (Partridge and White); T. J. Saltmarsh, Chelmsford (Partridge); *c*, Mrs. R. C. Sapwell (Partridge). *Hens*—1 and 2, G. H. Procter, Durham. County, Major Bignold (Buff). *hc*, T. J. Lovejoy, Lincoln (Buff); J. S. Pearson (Buff) (2); Major Bignold (Buff and Partridge) (2); Lady Gwydyr, Ipswich; W. Harvey; Mrs. R. C. Sapwell (Partridge); T. W. Savory, Burnham, Sutton (Partridge) (2); J. Bone, North Elmham; Major Bignold (White); J. Watson, Norwich.

BRAMHMS.—Dark.—Cocks.—1, Horace Lingwood, Creeting. 2, Lady Gwydyr. County, Col. Cockburn, Brecondale. *hc*, H. Dowsett, Pleashey, Chelmsford; W. Mansfield; Col. Cockburn, Brecondale; W. Branford, Fakenham; C. Tindall, Ipswich. *Hens*—1, Horace Lingwood; 2, Rev. R. Peake, Litcham, County, W. Bruton, Creeting; H. Dowsett, Pleashey, Chelmsford; L. W. Owydyr; W. Bruton. *c*, T. H. Williams, Brecon; H. R. Platt, Fakenham; W. Burrows, Diss.

BRAMHMS.—Light.—Cocks.—1, Lady Gwydyr. 2 and County, J. P. Case, Testerton, Fakenham. *hc*, H. Dowsett; Horace Lingwood. *c*, H. W. Savory; H. Love, Elsing. *Hens*—1, Horace Lingwood. 2, Lady Gwydyr. County, J. P. Case. *hc*, H. Dowsett; M. Leno, Markyate Street; C. Tindall. *c*, J. P. Case; H. Watson, Cringleford, Norwich.

GAME.—Brown.—Reds.—Cocks.—1, 2, County, and *hc*, H. E. Martin, Southport. *hc*, E. M. L. Cockedge, Woolpit; T. Wade, Stubbard. *c*, S. J. Stafford, Great Yarmouth.

GAME.—Black Red.—Cocks.—1 and County, D. E. Martin, Shipham. 2, E. M. L. Cockedge. *hc*, J. Fletcher, Stonecough; R. Hall, Cambridge; E. Branford.

GAME.—Any other variety.—Cocks.—1, E. M. L. Cockedge. 2, R. Hall (Pile). County, D. E. Martin. *hc*, J. Fletcher (Duckwing); D. E. Martin; T. Wade; G. P. Tricker, Fakenham (Duckwing); F. Sales, Crowle (Duckwing). *Hens*—1 and Cup, J. Fletcher. 2 and County, E. Branford (Black Red). *hc*, E. M. L. Cockedge (Brown Red). *hc*, W. Cnamhros, Dorking, Lynn (Pile); C. Waesy, South Creak (Brown Red); E. M. L. Cockedge (Brown Red); G. P. Tricker (Duckwing and Black Red); H. E. Martin.

HAMBURGERS.—Gold and Silver-spangled.—1, J. Wright, Lowestoft. 2, Mrs. W. Groom. County, H. T. Coldham, Lynn. *hc*, C. Deaton; H. Coldham; J. P. Case. *c*, Gold and Silver-spangled. 1, W. K. Tiekner. 2, Mrs. T. Thornhill, Bryn St. Edmunds. County, A. Baker, Downham Market. *Black*—1, Cup, and County, J. P. Case. 2, W. Cutlack, jun., Littleport. *hc*, W. Cutlack, jun.; S. Emerson, Potter's Bar. *c*, R. Crane, jun., Fakenham; T. A. Wright, Yarmouth.

SPANISH.—1, E. Brown, Sheffield. 2, F. James. County and *hc*, Col. Cockburn. *hc*, Rev. T. P. Platten; T. A. Wright; J. Norman, Colchester. H. Griss. **POLANDS.**—1 and Cup, W. Harvey. 2, J. Koye, Manchester. County, W. K. Patrick, West Winch. *hc*, W. K. Patrick (3); W. Silvester, Sheffield. *c*, W. K. Patrick.

FRENCH FOWLS.—1 and County, Miss J. Leathes, Fakenham. 2, W. Cutlack, jun. *hc*, W. Dring; W. Harvey. *c*, Mrs. Folkes, Hillington Rectory, Lynn.

TABLE FOWLS.—1, W. Cutlack, jun. 2, Mrs. F. Butcher, *hc*, Rev. C. H. Crosse, Cambridge; E. Branford. *c*, C. Horsley, jun., Southurpe.

SELLING CLASS.—Cocks.—1, Lady Gwydyr. 2, Rev. C. H. Crosse (Dorking). 3, Burck & Boulter, Sheffield (Spanish). 4, H. E. Martin (Brown Red Game). *hc*, J. Black, jun. Gold-pencilled Hamburgh; W. Harvey; Mrs. Southwood (Coloured Dorking) (3); F. Hardingham, Fakenham (Minorca). *c*, Mrs. South-

wood (Coloured Dorking). *Hens*—1, S. Osbiston, Raynham (Brown Red Game). 2, Rev. C. H. Crosse (Dorking). 3, Lady Gwydyr. 4, F. James (Spanish). *hc*, J. Bone, *hc*, C. Wimb; R. H. Martin (Brown Red Game); C. G. Ellis, Attleborough (Dorking). *c*, H. E. Martin (Brown Red Game). W. Harvey.

DUCKS.—Aylesbury and Rouen.—1 and County, H. C. Bonner, Kucham. 2, J. Brooke, *hc*, Mrs. Claxton, Thursford; J. N. Waite, Yarmouth; C. Horsley, jun. *c*, E. Branford. *Any other variety*—1 and 2, M. Leno (Black East Indian and Carolina). County, K. B. Leeds (Teal). *hc*, H. W. Savory (Muscovy); R. B. Leeds (Muscovy); J. W. Sharman, Fakenham (Black East Indian); R. B. Leeds (Carolina and Teal); J. N. Waite (Wild). *c*, A. T. Binny, Ryburgh (East Indian).

GAME BANTAMS.—Black and Broken Red.—1 and Cup, W. F. Entwistle, Bradford. 2, Mrs. E. H. Jeffries, Ipswich. County, J. S. Pearson. *hc*, J. S. Pearson; J. V. Morris; T. & H. Heath; R. Hall; W. Adams, Ipswich; C. P. Hart. *Any other variety*—1, W. Adams (Duckwing). 2, W. F. Entwistle (Pile). County, F. Cooper, Long Stratton (Duckwing). *hc*, F. Cooper (Duckwing); J. Graves; G. Watson (Duckwing); E. Farrington, Worcester (Pile); W. Adams (Duckwing); W. F. Entwistle (Pile); F. Sales.

BANTAMS.—Any other variety except Game.—1, W. Stringfield, Lowestoft (Gold-laced Sebrights). 2, G. B. Francis, North Ockendon, Romford (Black). County, Mrs. North, Romham Hall (White). *hc*, M. Leno (Laced); C. Reed, Cambridge (Black); Rev. F. Tearle, Gazeley Vicarage (White). *c*, Burck and Boulter (Black Rose combed).

TURKEYS.—1, M. Kew, Market Overton. 2, E. Arnold. *hc* and County, J. W. Sharman. *hc*, C. Wimb; N. A. Mosey, Kirby Bedon.

GEES.—1 and County, A. Cracknell. 2, J. N. Waite. *hc*, J. W. Sharman; Mrs. North. *c*, J. Hammond, jun., Thetford; J. W. Sharman; Mrs. Spurrell.

PIGEONS.

CARRIERS.—1 and Cup, W. Minson, St. Ives. 2, F. W. Metcalfe. County, H. Thurlow, Burnham Market. *hc*, H. Yardley, Birmingham; F. W. Metcalfe; H. Thurlow.

POUTERS.—1, W. Minson. 2, Mrs. Ladd, Calne. County, H. Thurlow. *hc*, Mrs. Ladd; W. Noitage, Northampton; J. Hawley; H. Thurlow (2). *c*, F. W. Metcalfe.

BARNS.—1, W. H. Tomlinson. 2, W. Minson. County, H. Thurlow. *hc*, C. Norman; H. Yardley.

TUMBLERS.—Balds.—1, 2, and County, W. Woodhouse, Lynn. *hc*, W. Banns, Lowestoft. *Beards*—1, J. Fielding, jun. 2 and County, W. Woodhouse. *hc*, W. Woodhouse; C. Cowley, Lowestoft. *Any other variety*—1, W. Minson. 2, J. Fielding, jun., Rochdale. County, W. Woodhouse. *hc*, F. W. Metcalfe, Cambridge.

ROLLS.—1, J. F. Loversidge, Newark. 2, J. Walker, Newark. County, H. Thurlow. *hc*, J. Walker; J. F. Loversidge; H. Yardley; W. H. Tomlinson. *c*, W. Woodhouse. Mrs. Ladd.

ANY OTHER VARIETY.—1, W. Woodhouse (Red Jacobins). 2, T. D. Green (Spanish Runts). *hc*, H. Yardley; W. Harvey (2).

SELLING CLASS.—1, A. W. Wren (Dragoons). 2, H. Thurlow (Blue Pouters). *hc*, W. Harvey; H. Thurlow (Carriers).

CAGE BIRDS.

CANARIES.—Clear, Yellow or Buff.—1, 2, Cup, *hc*, and *hc*, Collinson & Allen, Sprowston. *Variegated, Yellow or Buff.*—1 and 2, G. & J. Mackley, Norwich. *hc*, Collinson & Allen. *Any other variety*—1, G. & J. Mackley (Gold-spangled Legals). 2 and *hc*, Collinson & Allen (Crested).

BRITISH SONG BIRDS.—1 and 2, G. & J. Mackley. 2, W. Overton, Fakenham. *c*, W. Wright, Fakenham.

SELLING CLASS.—1 and 2, Collinson & Allen (Norwich Canary). 2, G. & J. Mackley (Ticked Buff Norwich). *c*, J. Dorton (Lesser Redpoll).

RABBITS.

LOP-WARRE.—1, F. Banks, London. 2, J. A. Weaver, Leominster. County, J. T. Coe, Downham Market. *hc*, C. J. Bental; J. T. Coe (2); Shaw & Allison, Sheffield (3); W. Kayner.

ANY OTHER VARIETY.—1, W. H. Tomlinson, Newark (Himalaya). 2, H. Dykes (Silver-Grey). County, J. Dorton, Burnham Market (Himalaya). *hc*, J. Richardson (Angora); W. J. Mavell (White Angora); J. F. Farrow (Angora); H. White (Silver-Grey); A. Hudson, Hull (Himalaya) (2); W. H. Tomlinson (Himalaya).

JUDGES.—Mr. Hutton, Rev. E. Fellowes, and Mr. Thurlow.

NANTWICH POULTRY SHOW.

THE thirteenth annual Show was held in the Town Hall on the 7th and 8th of February, and was a great success. The pens were arranged on each side of the room, as well as in the centre, and the Exhibition had a pleasing appearance. The majority of the *Game* were very fine, and the winners good in all points. Partridge *Cochins* were in excellent order, and Mr. Tudman, of Whitechurch, well merited his position. The *Spanish* and *Hamburghs* were a nice class. *Bantams* were not good, except the winners. The *Brahmas* were fine, but Mr. James Walker, of Keele, made short work of the competition with his birds. The pencilling of his hen was much admired. The Society's silver cup for the best pen in the Show was awarded to this pen. The *Ducks* and *Turkeys* were but of average merit. The *Pigeons* and *Singing Birds* were most interesting, and attracted a good deal of attention. Appended is the prize list:—

SPANISH.—1, R. Hulse, Winsford. *hc*, S. L. Edwards, Cote Brook.

COCH-CHINA.—Partridge—1 and *hc*, E. Tudman, Ashgrove. *Any other Colour*—J. Dutton, Bunbury.

BRAMA POOTRA.—1 and Cup, J. Walker, Keele. 2, J. Johnson, Over Winsford. 3, W. B. Etches, Whitechurch.

GAME.—Cocherels.—1, R. Ashley, Nantwich. 2, Galley & Co. 3, Sowerbutts and Co., Nantwich. 4, J. Chester, Nantwich. *hc*, R. Ashley; Messrs. C. W. M. Laxton & Co., Nantwich. *Superlatives.—Cocks.*—1, J. Chester. 2, C. F. W. Wrenbury. *Other than Black or Brown-breasted Reds.*—1, J. Wilkinson, Nantwich. 2, R. Ashley. 3, W. Church, Nantwich. *hc*, J. Wilkinson; R. Ashley. 2.

GAME.—Brown-breasted Reds.—1, Galley & Willett, Nantwich. 2, R. Ashley. 3, T. Burgess, Burleydam. *hc*, T. Burgess; G. F. Ward, Chicksen. 1, J. Purcell, Vauxhall. 2, R. Ashley. 3, T. Burgess. *hc*, J. Chester.

GAME.—Black-breasted Reds.—1, R. Ashley. 2, J. Manning, Crewe. *hc*, J. and E. Prince. *Chicksen.*—1, R. Ashley. *hc*, T. Dickson.

GAME.—Hen or Pullet.—1, W. Keycroft, Acton. 2, T. Burgess. 3, W. Perrin, Nantwich. *hc*, W. Stubbs.

POLANDS.—1, W. E. Little, Chester.

HAMBURGHS.—Pencilled.—1, W. Speakman, Doddington. 2, Mrs. Flynn, Hardingwood. 3, P. Hinde, Little Budworth. *Spangled*—1, Mrs. Flynn.

SELLING CLASS.—1, J. Platt, Swanlow. 2, S. Johnson, Nantwich.

GAME BANTAMS.—Black-breasted Reds.—1 and Cup, C. A. Bowles, Chester. 2, A. Ashley, Worcester. 3, T. Barker, Burley. 4, W. Clarac, Ruloe. *Brown-breasted Reds.*—1, T. Barker, Nantwich. 2, A. Ashley. 3, W. Downing, Newport. *Any variety.*—1, G. F. Ward. 2, P. Hmd, Badworth. 3, W. Griffiths, Nantwich.

BANTAMS.—Any other variety.—1, H. Hulse, Winsford.

SWEEPSTAKE.—1, J. Walker.

SHOWN AS EXTRA STOCK.—1, C. Herrin, Sandbach.
 DUCKS.—Rouen.—1, J. Platt, Swanlow. 2, S. L. Edwards. *hc*, R. Ashley, Nantwich. *Any other variety*.—1, Mrs. Horaby, Poolo Hall. *hc*, Miss H. F. Clemenson, Stapleley.
 GESE.—1, T. Whittingham, Bartherton. 2, W. Bowers. *hc*, T. Comer, Basford; W. B. Etches.
 TURKEYS.—1, W. B. Etches. 2, Mrs. E. Gibbs, Worleston. *hc*, Mrs. E. Gibbs; A. Robinson.

PIGEONS.—*Carriers*.—1, Prince & Pass, Nantwich. *Dragoons*.—1, S. Cliff, Nantwich. 2, J. Taylor, Crewe. *Extra*. 2, W. Gamon, Chester. *Pouters*.—1, J. Taylor. *Barbs*.—1, Prince & Pass. 2, J. Taylor. *Nuns*.—1, J. Taylor. 2, S. Armstrong, Barlast. *Tumblers*.—1, E. J. Rowley, Barlast. 2, P. Hinde, Badworth. *Fantails*.—1, Prince & Pass. 2, J. Taylor. *Jacobins*.—1, Prince & Pass. *Trumpeters*.—1 and 2, W. Gamon. *Olives*.—1, W. Gamon. 2, W. W. Kyrat, Acton. *Turbits*.—1, J. Slack, Austerson. 2, S. Armstrong, Barlast. *Any other variety*.—1, T. Gamau, Nantwich. 2, A. B. Bailey, Longton. *Doves*.—1, T. Gamau. 2, Mrs. J. Hockenbuhl, Nantwich.

SINGING BIRDS.—*Canaries*.—*Yellow Belgian*.—1 and *hc*, S. Williamson, Nantwich. *Buff Belgian*.—1, S. Williamson. *hc*, W. Barnett, Congleton. *Yellow Norwich*.—1, W. Barnett. 2, S. Williamson. *Buff Norwich*.—1, S. Williamson. *Variagated*.—1 and 2, S. Williamson. *Linnets*.—*Brown*.—1, H. Timmis, Walgherton. *Red*.—1, H. Timmis. 2, S. Williamson. *Skylark*.—1, W. Simmonds, Nantwich. 2, T. Jervis, Nantwich. *Bullfinches*.—1, H. Timmis. 2, S. Williamson.

RABBITS.—1, T. Gamau. *hc*, W. Beckett, Northwich; F. Boyer, Nantwich. *Zeewiest*.—1, T. Gamau. 2, J. R. Whittingham.

JUDGES.—*Poultry*: Mr. J. Douglas, Clumber. *Pigeons, &c.*: Mr. Ridpath, Liverpool.

SOUTH LONDON FANCY RABBIT SOCIETY.

THE half-yearly meeting of this Society was held at the "Angel Inn," Webber Street, Blackfriars Road, on the 10th inst. The following are the awards:—

Prize.	Age.	Length.	Width.	Weight.
	m. d. ins.	ins.	ins.	lbs. ozs.
1st. Mr. Pritchard's Fawn doe	6 21 .. 23 ..	54 ..	5 ..	8 13
2nd. Mr. Pritchard's Fawn-and-white doe	6 21 .. 21 1/2 ..	54 ..	5 ..	8 13
3rd. Mr. Cornwall's Grey-and-white buck	5 25 .. 20 1/2 ..	5 ..	5 ..	7 15
4th. Mr. Green's Black-and-white doe	4 11 .. 20 1/2 ..	41 ..	5 ..	7 2
5th. Mr. Bambridge's Fawn-and-white buck	3 22 .. 20 1/2 ..	5 ..	5 ..	7 2
6th. Mr. Bambridge's Tortoiseshell buck	3 24 .. 20 1/2 ..	41 ..	5 ..	7 14
7th. Mr. Cornwall's Grey-and-white doe	5 25 .. 20 1/2 ..	41 ..	5 ..	7 12
8th. Mr. Pritchard's Fawn buck	6 21 .. 21 1/2 ..	5 ..	5 ..	7 8
9th. Mr. Bambridge's Fawn doe	3 22 .. 20 1/2 ..	5 ..	5 ..	7 2
10th. Mr. Redgrave's Fawn-and-white doe	4 12 .. 20 1/2 ..	41 ..	5 ..	8 4

JUDGES.—Messrs. Vaughan, Lewer, and Bakewell.

PIGEONS.

YOUR correspondent (January 23rd), who signs himself "ONE OF THE OLD SCHOOL," is misled when he says there was not a single Pouter or Short-faced Tumbler exhibited at the young Show of the Peristerion Society. I exhibited in each class. Again, if by those who simply purchase birds to show and make money of them, your reporter means dealers, he says they show birds till their constitution is exhausted, and then sell at an exorbitant price; and your reporter also says it is very annoying to an exhibitor to be asked the price of a bird. If either of these statements were true of the amateur or dealer, which I deny, where is a young fancier to get stock from? The auction is all that is left, and he might have to wait longer than suited him.—H. HERITAGE.

[We admire your valour, but your offer to exhibit for a twenty-guinea prize would be an advertisement. If our reporter omitted noticing any deserving birds the omission was caused by our urging brevity, for we had little time for printing the report.—EDS.]

NEW METHOD OF INCREASING STOCKS OF BEES.

[Your readers will recollect some time back, that I drew attention to a plan for "increasing stock," put forward by an American bee-keeper of the name of Hosmer, by dividing stocks in autumn and encouraging them to breed early after cellar-wintering. I extract the following excerpt from the American "Bee Journal," which will show both what Mr. Hosmer's plan is, and how attention has been drawn to it across the Atlantic. Let it be understood that what is said below was spoken at a meeting of the North American Bee-keepers' Society.—B. & W.]

LORD calls were made for Mr. Hosmer, of Minn., who issued the challenge at the last meeting, to obtain 10,000 lbs. of honey from ten stocks of bees to start with in the spring, or forfeit the price of 108 swarms of bees at \$15 per swarm. Mr. Hosmer came forward and described his method of increasing stock. In the fall his plan is to divide his swarms so as nearly as possible to have them composed of one quart of bees. In taking these from the cellar early in the spring, he places the combs with the bees on one side of the hive, and suspends a sack of honey in the opposite side of the same, which the bees work on, and as fast as the combs are occupied with brood they are separated, and a new empty comb placed between the first. In this way the lower hive is soon filled with brood combs, which are removed, one at a time, to the upper part of the hive. In this way the whole hive may be filled with, say, eighteen combs, which are mostly

brood and young bees. This he would manage to have occur about the time that honey-gathering commenced in earnest. He then gave an instance of what he did with one hive the past season thus filled with brood. First taking out one comb, and placing it in a nucleus hive between two other combs, he allowed the bees to make as many queen cells as they chose, and just before these were ready to hatch removed three of them, and attached them to as many combs taken from the parent hive, and placed them in as many nucleus hives, with two more combs of brood taken from the parent hive. As soon as the queen was hatched he removed the three frames to a full-sized hive, and filled up with empty frames of comb and combs of brood from the parent hive, at the same time removing more queen cells from the first nucleus hive to the other nucleus hives, and treated as before. In this way, at the end of the season he had nineteen good strong swarms of bees made from the one to start with. It was by this method of increasing stocks that he intended to secure the large yield of honey proposed.

Mrs. Tupper said she must yield the palm to Mr. Hosmer. She aimed to increase brood as fast as possible, after removing from the cellar in the spring, in order to be ready to divide as early as the honey season commences—by last of May—she then divides, so as to make two swarms one. Did not seek to divide further, but aimed to prevent any after-swarming. When dividing, places a queen cell, nearly ready to hatch, into each old hive. This prevents any tendency to swarm; sometimes had made later swarms by dividing.

MOON.—I aim to have my stocks as strong as possible early in the season, then take one frame of brood and honey from a hive, and place in an empty hive (if the stock is extra strong can take two from a hive), and thus fill up the new hive. Go over the apiary once in about three days in this way, as long as the honey season lasts. Have thus increased a stock to the extent of nine or ten colonies from one. Supply the new hives with a fertile queen, or a queen cell just ready to hatch.

Several others gave their methods, which did not vary materially, but the above will give a fair idea as to what extent the dividing may be carried on.

IMPORTS OF PINE APPLES.—The island of St. Michael, so justly celebrated for its Oranges, is likely soon to be equally famous for its Pine Apples. The production at present is not large, but is annually increasing. "The Ocean" steamer brought 150 last week, which realised at public auction from 10s. to 30s. each.

OUR LETTER BOX.

BOOKS (S. M. L.).—If you mean bee-keeping, our "Bee-keepers' Manual" will suit you. You can have it free by post if you enclose five postage stamps with your address.

POULTRY-PLUCKING (B. P.).—You, as well as our critical contemporary, are quite wrong. The moment the knife is passed through the roof of the fowl's mouth it enters the brain, and sensation ceases. The quivering the *New York Tribune* mentions is only the contracting of the muscles, known to professional men as the rigor mortis. Our critical contemporary should direct his lash against the sheep-and-calf-killing butchers.

WOLVERHAMPTON AND BARROW SHOWS.—Mr. T. F. Ansell informs us that he won the extra prize for Dark Brahmas at the Show first named, and the first prize for Buff Cochins at Barrow. We published the prize lists as we received them. At the latter Show Mr. G. Fletcher was second, and Mr. G. Cartmel and Mr. J. W. Taylor highly commended in the same class.

CHALK FOR FOWLS (J. H.).—Do not mix chalk with the food. Have a mixture of the chalk and coal ashes in a heap, that the fowls can visit as they like. Oyster shells calcined in the fire until they readily can be pounded are quite as good as chalk for the purpose. There is nothing in melt that is superior to any other scrape of flesh for fowls.

FOOD FOR POULTRY.—"Will 'OYSTER SHELL' state the food which he says 'you never mention,' but with which he has succeeded in obtaining a very considerable number of eggs?—INQUIRER."

EGG-SATING HENS (F. E. S. and *An Old Subscriber*).—There is no cure but watching each hen on her nest and taking away the egg when laid, or having the nests made as drawn and described in our seventeenth volume, page 427.

DARK BRAHMAS (E.).—You may safely set eggs laid during the moulting season, but it is very unusual for hens to lay at that time. After a pullet has laid eighteen or twenty eggs you may set the others. The cock you have lost doubtless died from stoppage arising from improper feeding. It is more than probable that, having only hard food, the poor animal substituted hay for green food, and that it formed a ball in the gizzard. Such is almost always a hopeless case. As soon as you had succeeded in softening the contents of the crop you should have held the bird up by the legs, and by that means the contents would have been got rid of. We believe, if you have a post-mortem examination, you will find the inner part of the gizzard full of dry hay or grass, preventing the passage or digestion of food. We have, since writing the above, read your second letter. The piece of wire you enclose could not cause death. We have known fowls live and do as well as any others with a large pin passing literally through the gizzard, and having remained long enough therein to have been considerably eaten away, and to have formed itself a bed in the flesh. The small piece of wire would have passed away in the ordinary way, and without effort.

FOWLS FOR A FARM (J. M.).—If you wish to sell very high-class poultry you must keep Dorkings, and for a farm we believe no fowl is more profitable.

Brahmas are the next best, and there is no doubt they are much harder in some climates than Dorkings are. We are much opposed to any cross where profit is the object of poultry-keeping, as birds produced by them are unsaleable alive. The others, Houdans, Crécoires, &c., are non-sitters, and necessitate the employment of other breeds. Hamburgs' eggs are too small, and the same fault may be found with the birds.

PULLETS DISORDERED (G. H.).—Alter your feeding. Potatoes are bad food, oyster shells are worse. Fowls dislike oats. Throw two or three barrowloads of bricklayers' rubbish in a heap in the middle of their run. Let them scratch it about, they will find shells for their eggs. Give them daily some sods of growing grass cut with plenty of fresh earth; they will tear it to pieces and eat the whole of it. Let them have slaked oatmeal in the morning and evening, with Indian corn or house and table scraps at midday. They will soon do well, and lay plenty of good hard-shelled eggs.

COMMENCING POULTRY-KEEPING (Co. Mo.).—We advise you to keep Dark Brahmas, as they do better in confinement than any other breed. On the space you mention you may keep a cock and twelve hens well. If any part of it is grass, so much the better; if it is not, we advise you to lay it down at least half. In the other half let them have bricklayers' rubbish and road grit. Put them in heaps, as it amuses them to scratch them down. You may also advantageously plant a few artichokes. They afford both shelter and food in hot weather. You will require a separate sitting-house. The roosting-house may be open all day, but the sitting-house must be shut. When you hatch chickens you must put the hen under her rip among the currant bushes and the rhubarb. They will do good rather than harm. Place your buildings against the north wall; that will give you a southern aspect. Wooden houses will afford all the shelter and security you require. The roosting-house may be 6 feet deep, 8 long, 8 high; the door at one end, and the perches at the other. A sitting-house the same height, but 6 feet long and 4 deep, will be enough. Both must have earthen floors, and must be provided with windows, filled with perforated zinc for the summer, but provided with shutters for the winter. The roof should be slate or tile, and if it affords ventilation just under the eaves, so much the better. These wooden erections, if they are kept covered with gas tar, last many years, and they are every way more desirable than more durable and permanent buildings. We believe we have answered all your questions; if we have not, we shall be happy to do so. For many minor details we must refer you to Baily's book on fowls, where the subject is fully treated.

WHITE SILKIES (Cæsar).—Silkies should have white hair instead of feather. The cock has two feathers that may be called sickles, but they are a compound of the silky hair and a straight common feather. The comb should be double, flattened, and blue. The face should have a bright metallic blue; the skin and bones dark blue. They should be five-clawed and have dark legs. Many have a little hair on the legs, but there should be nothing like a feather. It would be a disqualification.

HOME-KEEPING FOWLS (St. Edmunds).—The only fowls that will not fly are Cochins and Brahmas. The Houdans are able birds, and do everything well except sit, but they are sad ramblers. We do not like fowls with their wings out. As you must suit your fowl to your place your choice is restricted; you must act accordingly. You have Buff and White Cochins, Dark and Light Brahmas. We think the latter very handsome, and we know their qualities are equal to the Dark. If you make up your mind to cut the wings you may choose any breed you like. We rather recommend you to see the birds than to buy from some of the imaginative pictures.

BRAMA COCK DYING UNACCOUNTABLY (Our Journal).—We can only imagine your bird picked up something poisonous. At his age there could be no leg-weakness, and the squalling would be caused by the beginning of the attack, which ultimately killed him. Cocks die from apoplexy, especially at this time of year. It may have been so in this case, but it is generally attended by a symptom you could not fail to have remarked—viz., a dark blue shade on the face and comb. Nothing but poison or an internal injury could have killed the bird in so short time.

GERMAN PASTE (F. Townley).—Nearly every kind of soft food now is paste, and there are so many kinds of paste, one is puzzled to say which is the genuine article. I can give a receipt for a very easily prepared and invaluable lark food, supplied with which they will need no other. The articles required are 1 lb. of meal, a quarter of a pound each of lard and moist sugar, and one egg. The meal is best prepared by grinding split peas in a coffee-mill. The ordinary meal as supplied by flour-dealers is too fine; besides, if you grind your own peas you know what the product of your labour is, which is more than you can say for many manufactured articles in these degenerate days, when rascality is at a premium. Rub the meal and the lard well together, and then add the sugar. The mixture will at this stage be still crumbly, and of such a consistency as to be easily rubbed through the hand, but on adding the egg, which must be well beaten, it will turn to something like soft soap, and you will think it will never become dry again. My original receipt did not include the egg, but it was recommended to me on so good an authority that I used it with the last lot of "paste" I made, and fearing I had spoiled it, I added as much ordinary meal as served to dry up the sticky mixture. Then bake the savoury dish, stirring it occasionally to prevent its becoming lumpy. Stow it away in an earthen jar, and it will keep good for any length of time. As a food for Skylarks it has no superior.

CANARY-GOLDFINCH MULES (Ilsem).—There is no sort of Canary which from any properties native to that sort, will produce what you call the best Goldfinch Mules. The fact is simply this—the offspring of the Goldfinch and Canary is, as a rule, a dark self-coloured bird; but it having been observed that here and there a Canary hen showed a tendency to throw Mules more or less pied, each hen have been taken care of, and by judicious pairing with cocks known to be of a strain from which pied Mules have not unfrequently sprung, something like a breed which can be depended on for throwing pied birds has been manufactured. This is a work of years to those interested in the production of these hybrids, and when any Mule-breeder becomes possessed of a reliable strain, he values them accordingly. There is no one sort of Canary to select, but as nearly every first-class Mule-breeding hen within my knowledge is pink-eyed, it seems to indicate that the Cinnamon is the most likely variety to produce curious hybrids.—W. A. BLAKSTON.

NIX VOMICA FOR CANARY'S ASTHMA (Spot).—"FRINGILLA CANARIA" says one drop in the water tin each morning.

MOVING STOCK INTO GREENHOUSE (I. M.).—It would be very injudicious to remove your bees at all, and particularly into a greenhouse, which is usually a most unsuitable place for a hive. If you desire an early swarm give them a small quantity of food twice a week during March and April, which will promote breeding.

HIVE OVERTURNED (Ignoramus).—You cannot do anything to your hive now, as probably the bees have secured the combs to each other and to the floorboard. If they are living, and take down food readily during genial weather, you may, we think, hope for a swarm in due time. We should advise your substituting boiled sugar for the barley-sugar during March and April, feeding from the top by the bottle system so often described in our pages. Give 2 or 3 ozs. twice a week, which will promote early and increased breeding.

EVANS ON THE BEE (W. I.).—We know nothing about the poem.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.					IN THE DAY.					Rain.
	Baromet- er at 29. and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1873. Feb.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
We. 5	30.159	31.3	31.3	Calm	36.6	35.6	30.5	46.0	32.5	—	
Th. 6	30.056	31.7	30.9	N.	36.9	37.5	26.2	46.5	26.4	—	
Fri. 7	30.111	32.2	34.4	N.E.	36.6	41.2	30.8	72.2	30.3	—	
Sat. 8	30.138	35.1	33.1	N.E.	36.4	36.5	34.1	58.1	33.0	—	
Sun. 9	30.211	34.5	32.5	N.E.	36.7	35.9	33.4	41.5	32.2	.018	
Mo. 10	30.209	34.5	32.	N.	36.4	42.1	31.9	61.1	28.6	.040	
Tu. 11	30.357	32.2	31.2	N.	36.5	37.9	30.2	76.1	28.5	.100	
Means	30.180	33.6	32.3		36.5	38.1	31.0	55.0	29.9	.068	

REMARKS.

5th.—Neither thawing nor freezing, but very dark all day; very foggy the after-part of the day and all night.

6th.—Still foggy, but not near so bad as last night; very gradual thaw, but scarce any sun; cloudy at night.

7th.—Very clear bright morning, and fine all day, at some parts very strong sunshine.

8th.—Dark morning; fair, but not a bright day; snow not yet gone; wind rather high at night.

9th.—Sleet early, snow just before noon, and occasional sleet all day.

10th.—Bright in early morning; snow between 9 and 10, fair soon after; snow at intervals all day; ground quite white at night with a splendid coating of snow crystals, some of the finer varieties being abundant.

11th.—Deep snow during the night; alternate sunshine and snow showers, ground white at night.

Temperature very uniform, and much the same as last week. Snow and sleet more or less daily, and very gradual thaw.—G. J. SYMONS.

COVENT GARDEN MARKET.—FEBRUARY 12.

No alteration here worth notice. Prices and supply remain the same.

FRUIT.

	e. d.	s. d.		e. d.	s. d.
Apples.....	1 sieve	3 0 to 5 0	Malberries.....	1 lb.	0 0 to 0 0
Apricots.....	doz.	0 0 0	Nectarines.....	doz.	0 0 0
Cherries.....	per lb.	0 0 0	Oranges.....	100	4 0 10
Chesnuts.....	bushel	12 0 0	Peaches.....	doz.	0 0 0
Currants.....	1 sieve	0 0 0	Pears, kitchen.....	doz.	1 0 0
Black.....	doz.	0 0 0	dessert.....	doz.	8 0 12
Figs.....	doz.	0 0 0	Pine Apples.....	lb.	5 0 8
Filberts.....	lb.	1 0 1	Plums.....	1 sieve	0 0 0
Cobs.....	lb.	1 6 2	Quinces.....	doz.	0 0 0
Gosberries.....	quart	0 0 0	Raspberries.....	lb.	0 0 0
Grapes, hothouse.....	lb.	4 0 10	Strawberries.....	1 lb.	0 0 0
Lemons.....	100	6 0 10	Walnuts.....	bushel	15 0 80
Melons.....	each	1 5 3	ditto.....	100	2 0 2 5

VEGETABLES.

	e. d.	s. d.		e. d.	s. d.
Artichokes.....	doz.	3 0 to 5 0	Mushrooms.....	potl.	1 0 to 2 0
Asparagus.....	100	5 0 10	Mustard & Cress, punnet	0	2 0 0
Beans, kidney.....	100	2 0 8	Onions.....	1 bushel	2 0 4
Broad.....	bushel	0 0 0	pickling.....	quart	0 6 0
Beet, Red.....	doz.	1 0 3	Parsley per doz. bunches	2	0 3 0
Broccoli.....	bundle	0 9 1	Parsnips.....	doz.	0 9 1
Cabbage.....	doz.	1 0 1	Peas.....	quart	0 0 0
Capiscums.....	100	2 0 3	Potatoes.....	bushel	4 0 7
Carrots.....	bunch	0 0 0	Kidney.....	doz.	0 0 0
Caiflower.....	doz.	0 4 0	Round.....	doz.	0 0 0
Celery.....	bundle	1 6 2	Radishes.....	doz. bunches	1 0 1
Coleworts.....	doz. bunches	2 6 4	Rhubarb.....	bundle	1 0 2
Cucumbers.....	each	2 0 4	Salsafy.....	1 bundle	1 0 1
pickling.....	doz.	0 0 0	Savoy.....	doz.	1 0 2
Endive.....	doz.	2 0 0	Scorzoneria.....	1 bundle	1 0 1
Fennel.....	bunch	0 3 0	Sea-kale.....	basket	1 0 2
Garlic.....	lb.	0 6 0	Shallots.....	lb.	0 3 0
Herbs.....	bunch	0 3 0	Spinach.....	bushel	3 6 5
Horseradish.....	bundle	3 0 4	Tomatoes.....	doz.	1 0 2
Leeks.....	bunch	0 2 0	Turnips.....	bunch	0 3 0
Lettuce.....	doz.	1 0 2	Vegetable Marrows.....	doz.	0 0 0

POULTRY MARKET.—FEBRUARY 12.

THE supply is small, but the trade is wretchedly bad. If there were an average supply the prices could not be maintained.

	e. d.	s. d.		e. d.	s. d.
Large Fowls.....	4 0 to 4 6		Pheasants.....	0 0 to 0 0	
Smaller ditto.....	3 6 4		Partridges.....	0 0 0	
Chickens.....	2 6 3		Hares.....	0 0 0	
Geese.....	7 0 7		Rabbits.....	1 5 1	
Guinea Fowls.....	3 0 3		Wild ditto.....	0 9 0	
Ducks.....	3 0 3		Pigeons.....	1 0 1	

WEEKLY CALENDAR.

Day of Month	Day of Week	FEBRUARY 20—26, 1873.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
20	TH		45.5	30.7	38.1	20	6	47	22	45	24	1	53	9	1	13	56
21	F		46.7	32.3	39.5	20	4	7	24	5	43	2	23	10	24	13	40
22	S		46.8	31.9	39.3	19	2	7	26	5	0	4	11	11	25	13	41
23	SUN	QUINQUAGESIMA.	47.4	31.5	39.4	14	0	7	28	5	8	5	after.		26	13	32
24	M	ST. MATTHIAS.	47.1	32.8	39.9	20	58	6	29	5	2	6	29	1	27	13	23
25	Tu	Shrove Tuesday.	47.7	32.7	40.2	22	55	6	31	5	42	6	59	2	28	13	14
26	W	Ash Wednesday.	47.2	33.6	40.4	23	53	6	33	5	11	7	32	4	29	13	4

From observations taken near London during forty-three years, the average day temperature of the week is 46.9°; and its night temperature 32.2°. The greatest heat was 62°, on the 25th, 1863; and the lowest cold 10°, on the 21st, 1855. The greatest fall of rain was 0.92 inch.

FERNS AND FERN-CULTURE.



T all seasons of the year we admire the grace and elegance of our hardy and exotic Ferns. There are very few gardens in which they do not find a place, and where their culture is not attempted with more or less success. Year by year they are increasingly cultivated, and, as a consequence, continued efforts are made to obtain new species and new forms to supply the demand. Some exceedingly handsome species have been introduced

within the last few years, and many elegant and handsome forms of the old species have been selected.

Perhaps the most graceful, or at least the most useful, of all Ferns is the *Adiantum cuneatum*. It is very easily cultivated, the mature fronds keep well after they are cut, and there is none more useful for buttonhole flowers, bouquets, or to mix with cut flowers for any decorative purpose—indeed, seldom is any other species used for the best bouquets in Covent Garden; but the mature fronds ought only to be used, as young fronds very quickly shrivel. The true British Maiden-hair is much like *A. cuneatum*, but it has larger pinnules, and does not grow so freely; it requires similar treatment to *A. cuneatum* when under cultivation, and is most at home in a cool stove. Several distinct forms of this have been raised; E. J. Lowe, Esq., of Nottingham, has two; the best is *A. Capillus-Veneris* admirabile, of which the fronds are more wavy and graceful than in the original. *A. Capillus-Veneris daphnites* is a more dwarf form of the species, and the fronds have larger pinnules. *A. Capillus-Veneris magnificum* and *undulatum* are also very desirable, and should be in all large collections.

Of the recently-introduced exotic species of *Adiantum* some have the young fronds tinged of a deep red colour. A small-growing very neat species is *A. tinctum*, but it is not of free growth. *A. Veitchianum* has fronds of the deepest red, and is very free. *Adiantum asarifolium* is a very novel species with simple orbicular fronds, when full grown about 3 inches across. It should be grown for its distinct character. *A. concinnum latum* is a charming form of the species; the fronds are more erect in growth. *A. farleyense* is the most magnificent of all, but as it does not produce fertile fronds it is yet scarce; it can only be increased by division. It is not so easily grown as most of the other species, and requires rather different treatment. Most of the *Adiantums* thrive with a fair supply of air, and should get a little sunshine; while *A. farleyense* is much affected by draughts, and the fragile delicate pinnules are injured by sunshine.

The potting material for *Adiantums* should be about equal parts of tough fibrous peat and turfy loam; a little silver sand and a few pieces of charcoal should be added to keep the whole porous. The repotting of Ferns should be done with care; if the ball has become matted with roots prick amongst them with a pointed stick until they are loosened out, but do not break the ball of earth. Some of the old spent mould may be removed from the surface.

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The pots to be used should be clean, and they should be one or two sizes larger, according to the vigour and species to be potted. One large potsherd should be placed at the bottom of the pot, and the smaller pieces, which should be quite free from dirt, placed over it in a careful manner. The compost should be packed round the ball rather firmly, but not quite so firmly as is done with hardwooded stove or greenhouse plants. Do not water the plants immediately after they are repotted; this is a matter I have continually kept before the readers of this Journal in all my articles on pot-culture. Experienced cultivators of pot-plants do not require to be told about it; but I have seen expensive plants taken to the potting-shed, shifted into another pot, and watered on the hand-barrow before being removed to the stove or greenhouse—such is barbarous treatment, and highly injurious to delicate plants. Frequently I do not water plants for a week or ten days after they are repotted (when the operation is performed early in the season), and by that time fresh rootlets are formed, and ready to take up the water when it reaches them. The same treatment applies to all classes of pot-plants.

Davallia is a useful genus of Ferns, and nearly all of them are adapted for small houses. Some very distinct and notable additions have been made during the last and previous years. *D. Mooreana* is a noble and very handsome species, its broad arching fronds are between 2 and 3 feet in length. It is a stove Fern, having been introduced to this country from Borneo. *D. parvula* is one of the smallest of the species, the fronds are only a few inches high, but are finely divided and very neat. *D. Tyermanii*, or *Humata Tyermanii*, was brought into notice last year; this is very distinct, and similar in size to the last. It is well adapted for basket-work, and was introduced from the west coast of Africa.

The Gold and Silver *Gymnogrammas* should be grown in all plant stoves, but they ought to be placed in a part of the house where they are out of the reach of the syringe, as watering them overhead sadly disfigures them. *G. Laucheana* makes a very neat medium-sized specimen, and the gold powder underneath the fronds is of the deepest yellow. A major form of this has been exhibited, and the fronds have the same rich colour. *G. crysophylla* is also a very desirable species, slightly powdered on the upper surface and golden yellow underneath. Of the Silvery species, *G. tartarea* and *G. argyrophylla peruviana* are the best. A very elegant species was exhibited by the Messrs. Veitch, of Chelsea, very recently. It seemed to be a hybrid between the Gold and Silver species; the fronds are finely divided, and have a very graceful appearance; it is named *G. decomposita*.

The *Lomarias* are an easily-cultivated class, and some of the species are very pretty. *Lomaria gibba* is very easily produced from spores, and in a small state it is very pretty as a table plant. *L. gibba crispa* is a small-growing form, which is also pretty in small plants, but it does not make a handsome specimen. *L. gibba Bellii* is well-deserving of notice, as it makes a handsome specimen,

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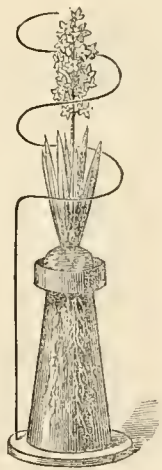
and very seldom produces fertile fronds. The fronds are similar to those of the species, except that the ends are singularly tasselled.

It would fill many pages to describe half what ought to be grown in collections, and would occupy too much space. A few more remarks on culture may be added. Except Maiden-hairs, most stove Ferns thrive in turfy peat, with a very little loam added to it, and when the pots are well filled with roots, a good supply of water is required. Too much water before the pots are tolerably well filled with roots, and overpotting, will cause the soil in the pots to become sour, after which the plant will not thrive. During winter a high night temperature is not desirable, 55° will be quite sufficient; nor should they be syringed overhead at this season, although the atmosphere should be pretty well charged with moisture derived from water scattered about the floors and stages. If the weather is fine, after the first week of March the plants may be syringed overhead (always excepting the Gymnogrammas, which are disfigured by the syringe being used upon them), and as young fronds will now freely be produced with increased warmth, the house will require to be shaded during hot weather. Ventilation requires, perhaps, more attention during this than any other month of the year. Unless great care be taken vegetation suffers from the drying winds which we have, often accompanied by frost. Admit very little air at such a time, as it will be better to shade to keep down the temperature.

Ferns are subject to be attacked by various insect enemies. Where bug is plentiful it gets upon the fronds of some of the species, and can seldom be dislodged without injury to the plant. Others are attacked by thrips, which can be destroyed by two or three applications of tobacco smoke. Green fly will also attack the young fronds of Lomarias and check their growth. These may be destroyed by the same means.—J. DOUGLAS.

SUPPORTS FOR HYACINTHS IN GLASSES.

HAVING often been troubled to find a really good and efficient support for Hyacinths in glasses, I have this year had some made on a plan of my own, and they have answered thoroughly in all respects. They have the additional advantages of being simple and easily made by any ordinary carpenter, and are also light in appearance. I have a circular flat piece of wood about 4 inches in diameter for the glass to stand on; into this is inserted a piece of iron wire, which is carried upright until about 4 inches above the top of the glass, and is then bent round and round like a corkscrew, each circle being about 3 inches in diameter. Your readers will perhaps better understand what I mean by the accompanying rough sketch.—E. C., Oakham.



Hyacinth Support.

ROYAL HORTICULTURAL SOCIETY. ADJOURNED GENERAL MEETING.

FEBRUARY 18TH.

THE adjourned Meeting of the Fellows of the Royal Horticultural Society was held on Tuesday afternoon in the Council-room, South Kensington, W. Wilson Saunders, Esq., F.R.S., in the chair. There was a very full attendance, the room being filled to the doors; and the proceedings excited great interest, amounting in several instances to evidences of strong feelings on the part of the supporters and opponents of the Council's policy respectively.

THE CHAIRMAN, in opening the proceedings, said he regretted that the post of Chairman had devolved upon him, but, as he was one of the Vice-Presidents of the Society, it became necessary for him to accept the position that day, as Lord Henry Lennox, M.P., who presided at the Meeting that day week, had written to say he had been summoned to the Court of Common Pleas, in an action in which he was plaintiff, and that must be his excuse for non-attendance at the Meeting. Now, the Meeting had been summoned that day for the discussion—he would not say of propositions—but of something which had been proposed to the Council. The letter of the Commissioners of the Exhibition of 1851 had been read to the last Meeting, and everyone in

the Meeting probably had certain propositions in their possession which he held in his hand. This letter* had never come otherwise to the Commissioners except by report; but as soon as that letter apparently reached the ears of the Commissioners they had a meeting. He should now call upon the Assistant Secretary to read a very important letter dated 18th of February, 1873 (that morning). A meeting of the Council was called that day at two o'clock, and the letter placed in their hands, and the Fellows could well conceive that the Council had really no time to consider the letter, which he would himself read to the Meeting. It was as follows:—

"The attention of the Committee of Management has been called to a draft letter dated 12th February, 1873, which has been circulated amongst the Fellows of the Royal Horticultural Society, as the intended reply of the Council to the Commissioners' letter of the 8th of February. They understand this letter contains the alterations of the conditions the Council are prepared to recommend to the Fellows for acceptance, as terms of agreement between the Royal Horticultural Society and Her Majesty's Commissioners. While the Committee of Management are desirous of coming to an amicable arrangement between the Royal Horticultural Society and the Commissioners, by which the rights of both may be preserved, the Committee are not prepared to recommend to the Commissioners the modifications which have been proposed [cries of hear and loud laughter]. The Council may, therefore, think it unnecessary to submit these modified proposals for the acceptance of the Fellows to-day [renewed laughter]. While reverting to the subsisting agreement, the Committee of Management express their desire to co-operate with the Council in effecting arrangements which will promote the convenience and comfort of the public who may visit the Horticultural Gardens and the Exhibition. "I have the honour, &c.,

(Signed) "T. A. WRIGHT, Secretary to the Executive."

Now, gentlemen, continued the Chairman, you will see that we are by this letter entirely thrown back upon our agreement, and that is really our position. There is nothing before the Meeting as regards the document which has been sent to you, or any previous document [laughter and ironical cheers].

Several Fellows rose to points of order, a good deal of confusion being the consequence.

THE CHAIRMAN.—One at a time, gentlemen, if you please. If I am out of order I will sit down promptly, but if I am in order you will allow me to state that the Council thought it necessary for me to read—

SEVERAL FELLOWS.—We have not heard a word of the letter [hear, hear].

THE CHAIRMAN.—Well, I will ask Mr. Richards, the Assistant Secretary, to read it to you [hear, hear].

A MEMBER.—What is the date of the letter?

MR. RICHARDS.—To-day.

THE CHAIRMAN.—If you have not all heard the letter I will have it read to you again, but I assure you I did the best I could with my poor voice [hear, hear].

A FELLOW.—Who are the Committee of Management? I thought we had only to deal with Her Majesty's Commissioners.

THE CHAIRMAN.—They are the Committee of Management of Her Majesty's Commissioners [hear and a laugh].

ANOTHER FELLOW.—We do not recognise them. Who is the letter signed by?

* The letter referred to is as follows:—

"Royal Horticultural Society, South Kensington, Feb. 12th, 1873.

"SIR,—The Council of the Royal Horticultural Society having had under their consideration the letter of Her Majesty's Commissioners of the 8th inst., are prepared to recommend to their Fellows the acceptance of the terms for an agreement, as herein set forth.

"1. The Society to admit to the Gardens, conservatory, and arcades, and to the flower shows at Kensington, all the visitors to the Exhibition, excepting on Sundays.

"2. The Fellows of the Society to be entitled to one non-transferable ticket of admission to the Exhibition and Gardens for each guinea that they pay to the Society. Life Fellows now on the books to have corresponding privileges. Debenture holders to have one season ticket for the Exhibition for each debenture.

"3. The annual subscription to the Society and for Exhibition season tickets to be the same, and only to be altered by mutual consent.

"4. The receipts from the Exhibition and Gardens on every Wednesday during the Exhibition to be equally divided between the Commissioners and the Society. On the other days of the week the receipts from the Exhibition and Gardens to be the property of the Commissioners.

"5. The Society to have the use of the north-east and north-west entrances on Sundays and during the period when the Exhibitions are not open.

"6. When the Society receives in any one year a sum in excess of £8000 for yearly paying Fellows' tickets, they shall pay to the Commissioners one-half of such excess, and the Commissioners to pay to the Society one-half of their total receipts for season tickets, so long as the total amount received by the Commissioners on account of Exhibition season tickets does not exceed £4000.

"7. The Commissioners to pay to the Society annually the sum of £4000.

"8. Of this sum £2000 is to be appropriated to the formation of an accumulating redemption fund, for the extinction of the debenture debt, and the remainder towards the payment to the Commissioners of the rental reserved to them under the lease to the Society.

"9. In settling the annual accounts of the Society, the Society shall not be charged with the one-fifth part of the existing life compositions.

"10. No more life members to be accepted during the continuance of this agreement with Her Majesty's Commissioners.

"11. These arrangements to be for the whole term of the Society's lease, unless the Exhibitions cease.

"I have the honour to be, Sir, your obedient servant,

"JAMES RICHARDS,

"MAJOR-GEN. H. Y. D. SCOTT, C.B.

"Secretary to Her Majesty's Commissioners."

Sir ALFRED SLADE.—It is not signed by General Scott.

Mr. SHIRLEY HIBBERD.—Then it has no official value for us here to-day [cheers].

Mr. A. F. GODSON.—The only person who can sign the communication is General Scott, and I simply ask is that the condition in which the document is—is it, in point of fact, not signed by General Scott?

Sir A. SLADE.—The first communication was signed by General Scott.

Mr. WOOSTER wished to know whether any persons other than Fellows were present.

The CHAIRMAN said he had not taken a survey of the Meeting, and hence was perfectly unprepared to answer the question, but he did not think that any person unconnected with the Society would take part in the Meeting.

Mr. A. F. GODSON.—Any person who is not a Fellow, and votes upon any money question, may be prosecuted for fraud [loud laughter].

The CHAIRMAN.—The question is asked whether any person's not Fellows are present. I will make the request that any who are not Fellows will withdraw from the Meeting [hear, hear].

A GENTLEMAN asked if that was required of those who held extra tickets from Fellows? He had no intention of voting or exposing himself to the heavy penalties with which they were threatened [laughter]. He had always availed himself of the two-guinea transferable ticket, but if that hospitality was withdrawn he should retire [hear and laughter].

The CHAIRMAN.—Then I do request that if there is any voting, only those will vote who have the power to give a vote [applause].

A FELLOW.—Let only those who have paid their subscriptions vote [oh! interruption, and question]. It is a very pertinent question that only those who have the right to vote should do so [hear and cheers].

The CHAIRMAN.—There is nothing before the Meeting, and I should be obliged if you will allow it to proceed [interruption].

A FELLOW remarked that they were all ready and willing to pay their subscriptions, but they should like to know what terms they were going to have? [loud cries of hear].

General SCOTT said it appeared to him that the mere question at present before the Meeting was as to the letter read to them being signed by Mr. Wright. It seemed to be supposed that there was some hidden mystery about this; but perhaps the Meeting would allow him to inform them that he had been present at a meeting held that day of the Committee duly authorised by Her Majesty's Commissioners within certain limits to recommend, or not to recommend, the result of the negotiations conducted with the Council of the Society. It was stated in the letter that the Committee of Management would not be prepared to recommend to Her Majesty's Commissioners the terms named in the letter of the Council of the Royal Horticultural Society. He (General Scott) had not the slightest objection whatever, if it were necessary, to have Mr. Wright's name scratched out, and his own name substituted. Perhaps after that explanation the Meeting would not think that necessary [a laugh]. He must take the liberty of speaking of another matter, even although he were out of order in doing so [oh, oh]. A gentleman stated he (General Scott) was Secretary to the Royal Commissioners —

Mr. A. F. GODSON.—And to the Royal Horticultural Society also [cheers].

General SCOTT.—Well, the meaning is the same. I am the Secretary to the Commissioners, and also to the Royal Horticultural Society, and if I am acting in these two capacities it is your own fault [loud cries of oh, and interruption], and I now place my resignation in your hands [cries of oh, and uproar]. If you think it for the benefit of the Society I will resign [cheers and cries of no].

A FELLOW.—What is the motion before the chair?

The CHAIRMAN.—There is no motion before the chair at all. The letter, as far as I can read it, and I cannot understand it in any other way, is to the effect that Her Majesty's Commissioners will not assent to the propositions on the paper before you, and, therefore, they say, that reverting to the subsisting agreements between the Society and the Committee of Management, they are desirous of co-operating with the Council in effecting arrangements which will promote the convenience and comfort of the public who may visit the Horticultural Gardens and the Exhibition.

A FELLOW.—What does that mean? [Cheers].

The CHAIRMAN.—We do not know what it means [loud laughter, and cries of oh].

The FELLOW.—What course does the Council propose to adopt?

The CHAIRMAN.—I can only give my own private opinion. The Council have met and received this document, and if you ask what it is—it is this, that we as the Council or you as the Fellows of the Society have a right to determine under the old arrangements made from time to time that you have a right to the conservatory [hear], and to the arcades [hear], and to stop

if you please any one coming out of the Exhibition into your gardens [loud cheers]. All this you have a right to do, but I do not mean to say whether it is politic or not for you to do so. I am only expressing my own private opinion. You have a right to make such arrangements as to admit into the Gardens from the Exhibition anybody or nobody [cheers].

Sir A. SLADE said he believed they were assembled that day to resume the discussion on the motion for the adoption of the Report of the Council for the past year.

The CHAIRMAN.—Certainly, that is the question.

A FELLOW.—That Report has been withdrawn by the Chairman.

Sir A. SLADE.—I beg your pardon, the fact is quite different. The Chairman had informed him that he was right in assuming that they had met to resume the question whether the Report of the Council be received or not. Now, he (Sir A. Slade), proposed to offer a few remarks to the Meeting to show why it was that this Report should not be received and adopted by the Meeting. In the Report there was this special paragraph, "The Council, looking to the position of matters and the necessity of circumstances, are satisfied that their policy in this respect was wise and ought to be persisted in." He maintained that their policy was not wise and ought not to be persisted in [cheers and no]. What was their policy of last year? It was to allow a great many of the Exhibition people into our gardens, thus sacrificing our rights and privileges [loud cheers]. The only possible excuse for it could be a financial success; but what was the result of last year's finance? It was dinned into our ears that we were able in 1862 and 1871 to pay our rent, but they did not tell us what we were able to do in 1872—also an Exhibition year [cries of hear, hear]. He had looked into the accounts and the result was, that at the end of 1872 instead of being enabled after the sacrifice of their privacy and comfort to pay their rent—£2400—which was the extreme amount of rent they could have ever to pay, because they were not liable for it unless they made it—they only had a balance of under £200. And what did the Council do? They paid the Exhibition Commissioners £1200 of our money, £900 of which ought to have remained in our hands. He hoped he was wrong, but that fact of itself called for a Committee of Investigation into the accounts [hear and cheers]. That was the result of their policy of last year, and they stated they were going to persist in it. They had then a proposal of the Exhibition Commissioners to the Council, in which they asked the latter what answer they were going to make so that they might join the policy they were going to persist in. What was it they had in the letter? What did the Council say? They earnestly entreated the attendance of the Fellows to support them in that policy which had been so disastrous to the Society and its Fellows. They were told that if these arrangements were carried out they would result in a balance of £5400 in favour of the Council. He should not go into these facts because his honourable friend Mr. Hardcastle was prepared to follow him, and show that they would lose many thousands—that they would have enormous losses by giving away £30,000, £40,000, or £50,000 worth of tickets to the Exhibition Commissioners [cheers]. Gen. Scott told them that as honest men they ought to pay their rent, and that they could not pay it unless they made some such arrangements as these with the Commissioners. That was a very taking phrase, but it had no foundation [applause]. They ought to carry out their arrangements but no more. Honest men carried out their agreements willingly, but dishonest men were forced to do it [hear]. In the Royal Charter, §135, he found it stated that the disposal of the receipts of the Gardens was to be made in the following way: First, that the whole of the expenses of the Gardens were to be charged to the receipts; and secondly, the interest on the debentures; and thirdly, the sum of £2400 to the Commissioners as rent "if the receipts should be adequate for such payment [loud cheers] after retaining for the said Society the sums authorised for the expenses and interest; but otherwise such a sum only as shall be equal from year to year to the residue of the receipts after the sums in precedence." So that the Society were only called upon as "honest men" to pay what they had left after defraying their expenses. What, then, did General Scott and the Council mean by saying that as "honest men" they ought to do this, that, and the other? [cheers]. They were told that if they did not pay their rent in five years they could be turned out of the Gardens. That was not so if they paid in any five years £2400, which, he believed, they could do by means of their own finances if it were left to the management of the Council, and that the latter were independent of the Commissioners [loud cheers]. But the extraordinary fact was that the President and Secretary of the Council were also members of the Exhibition Commission. The Duke of Buccleuch was the head of the Royal Commission, and General Scott was the principal secretary [hear, hear], and he was told there were two other Commissioners on the Council board. He had shown the Meeting quite enough to convince them that the Council of the Society was not independent of the Exhibition Commissioners, and that the Society

had not fair play [loud cheers]. Now, let them discuss the policy which the Council said they were determined to carry out, and it was for the Meeting to say if that was the policy they wished their Council to persist in. It was quite evident the Commissioners wanted something very badly from the Society. The Exhibition was practically in two halves—one on this side, and the other at Prince's Gate. He believed that without the sanction of the Society not one person could pass through their property, and he had no doubt it would be a very serious thing for the Exhibition Commissioners if they had to pay a very handsome sum to the Society [great laughter]. If he had the bargain to strike he should make them pay smartly [renewed laughter]. But what did the Council say? They wanted absolutely to pass all the Exhibition visitors over the Gardens without any payment whatever [no, no, from the Council]. Well, without any payment for that particular privilege [cheers]. The Council said "no, no," but he referred now to the financial scheme in the Report, and the first clause stated that the Society was to admit to the Gardens all visitors, except on Sundays; and the second clause gave this *quid pro quo*, that the Fellows were to be entitled to one non-transferable ticket for the Gardens for each guinea—that was, they were to give up the privilege of introducing, as four-guinea Fellows, every day six persons, for the magnificent present of four non-transferable tickets for the annual bazaar [laughter and cheers]. That was not the policy he wished to see followed [cheers]. The question amounted to this—"Shall we admit the Exhibition visitors to our Gardens, and if we do, what shall they pay?" Of course, there was a further question—"Shall we refuse it altogether, and cut ourselves adrift from the Commissioners, and stand by ourselves on our own account?" Mr. Hardcastle would show them that when they did so they would have a large surplus. Last year they made £1800 out of the Birmingham Show, and that alone would form the foundation of a very respectable sinking fund. In 1871 they paid their rent, and they were perfectly safe until 1876 if they paid £2400 in that year.

A FELLOW.—You are bound to apply the surplus of the year.

SIR A. SLADE.—Yes, but the surplus only of the receipts of the Gardens, not the surplus of Shows at Bath or elsewhere. He could assure the Meeting he was perfectly up in his subject, and that they would not find him astray [laughter]. He felt certain that the majority of persons in that room were London Fellows, and he asked them to look at the disastrous policy which the Council asked them to persist in. The Gardens would be perfectly ruined, and if they went into them to enjoy horticulture they would find them filled with Exhibition visitors who came there to eat their sandwiches [hear and a laugh]. The charter stated that the object of the Gardens was for the improvement of horticulture, useful and ornamental, and the arcades were made to keep the gardens from further encroachments. What purpose did they serve now? Why, they were used as exhibition stands, and refreshment buffets for Spiers & Pond [laughter and hear, hear]. Concluding a speech which was frequently applauded in its delivery, Sir A. Slade moved that the Report of the Council, as it at present stands, cannot be received by the Meeting, and that it be not adopted [loud cheers].

MR. A. F. GODSON rose to ask a question respecting the balance sheets, two of which he held in his hands, which were issued by the same auditors and dated the same day. Both were sent from the Horticultural Society to him, and one showed a difference in income from the other as between £13,600 and £15,300. Which of these balance sheets were they discussing?

A FELLOW.—Are we dealing at all with the balance sheets?

THE CHAIRMAN.—No, sir, we are not.

MR. GODSON.—The balance sheet is in the Report.

SEVERAL FELLOWS.—None of us have received it [hear, hear].

A MEMBER asked what was the precise object Sir A. Slade had in view.

SIR C. DAUBENY.—At the Meeting this day week, Lord Henry Lennox said he should embody Sir A. Slade's resolutions in the Report, and make them a part of it.

SIR A. SLADE.—We are here, I take it, to consider the Report of the Council. I did not press my resolutions last day, and Lord Henry Lennox said he should not do anything until the answer of the Council was given.

A FELLOW.—Should we not simply waste our time by going into the accounts? I have not seen them.

MR. GODSON.—But I have [laughter].

A FELLOW said he was of opinion that before the Annual Meeting the accounts should be circulated amongst the Fellows, so that they could discuss them and agree as to what should be done. Although he was a Fellow of long standing, he had not seen the Report or accounts [oh].

MR. LIGGINS thought there had been a great breach of faith on the part of the Council [hear, and no] in some things. He thought it the most monstrous thing that he had ever read—that document which the Council asked them to support [cheers, and no]. He thought it a most disgraceful thing that the Royal Horticultural Society should be ruled by General Scott, a double Secretary, who sat at a Board which was in direct antagonism

to the Council [oh, and interruption]. He thought it a great piece of effrontery that the Council should recommend that General Scott should hold that position [hear, no, and confusion]. He thought it monstrous to have as their Secretary the Secretary of an Exhibition which ought to have been wound up long ago—which should have been utilised for the public good instead of being kept as a huge bazaar to the great injury of the tradesmen of the country [hear, and laughter]. The Society ought not to place themselves in the hands of Commissioners like these. What did they actually see taking place? The noble soldiers of Great Britain whitewashing, under General Scott, the ceilings of the Exhibition [eries of question, and much uproar]. He had been invited there to discuss the Report, and he had never had an opportunity of seeing it.

THE CHAIRMAN.—According to one of the bye-laws, the printed copy of the balance sheets may, seven days previous to the Meeting, be given to any member applying for the same.

MR. A. F. GODSON.—Which is the balance sheet I am asked to believe?

General Scott in reply said there was a balance sheet as between the Commissioners and the Society. His own opinion was that the Society and the Commissioners were partners, and for this reason—that after they paid their rental and debenture debt, the profits were divided between the two [hear, hear]. One of these statements was drawn up in conformity with the Charter to meet this case of partnership between the Commissioners and the Society; the other in conformity with a request of the Fellows at a meeting a few years ago, that the accounts should be drawn up in such a way as that the Fellows should see what the receipts were and were not. If anything was to blame for having a double account, it was the same disorder in carrying on such a meeting as the present which led to that result [loud cries of order and no]. But it was the ease. This second statement had been drawn up in conformity with a resolution passed by the general body of the Fellows. And with reference to the flower shows not appearing in the Commissioners' accounts, they ought not, because it would make a difference between the two statements. With reference to the gains to be made by the country shows, although he had been a little abused that day, he had had a principal hand in starting them. But, then, at Oxford, there was a loss of £300, at Leicester they made nothing, and for the last six years their total receipts on this account had been only £1800. If there was a partnership between the two bodies it may have served to stave off difficulties in the past. As far as he was concerned, he should only be too happy to be released from such a position as he occupied [no, no]. Rather than discuss the merits of the Council individually, the Meeting should consider whether they were prepared to pass a vote of confidence in the Council or not, and in saying that he believed he spoke the sentiments of the Council [hear, hear].

A FELLOW remarked that if the Council had mixed the property in partnership, it was not quite clear that the Council had not a right to share in the profits made by Her Majesty's Commissioners [a laugh]. He thought it probable the Court of Chancery might say they were.

MR. LINDSAY wished it to be understood that those who had come there to oppose the policy of the Council did not want to oppose the legitimate harmony which should exist between the Commissioners and the Society [hear, hear]. They felt it to be of the greatest interest to the Society that it should be in harmony with the Commissioners, but they also felt that the policy of the Commissioners tended entirely in the one direction. He felt, as a member of the Society, that did the policy of the Commissioners prevail, all his interest in the Society would be gone altogether. As a four-guinea subscriber, he felt that the tickets under the new policy would be perfectly useless to him, and that he believed was the opinion of the majority of the Fellows [hear, hear]. It was proposed to take away the privileges of the Fellows in order to enable the Exhibition visitors to cross the Gardens to partake of tea and coffee. He looked upon it as a great misfortune that the Exhibition should be there at all, for it was the ruin of the neighbourhood, and was ruins to the tradesmen [hear and laughter]. He thought that when there were two parties to an undertaking there ought to be a certain amount of harmony and courtesy between them, so that if either made a concession that party ought to have a *quid pro quo* [hear, hear]. What was proposed would be a direct loss to them individually and collectively. The Council said they should act in harmony with the Commissioners, but the latter had proposed a scheme which took away all the Fellows' privileges, and he thought the way in which it was attempted to settle the business was not creditable to the Council [hear, hear]. The Council said if this policy was not adopted they would resign—that they had come with that alternative. He had come prepared to say that a Council which took up that position ought not to possess the confidence of the Fellows, and ought to resign [cheers]. They now told the Meeting that question was not before them because the Commissioners had withdrawn it. Seeing the extraordinary policy

which the Council were prepared to recommend, he felt it his duty to second the motion that this Meeting do not receive or adopt the Report of the Council [hear and cheers].

Mr. C. POYNTZ STEWART said he should be happy to second the motion proposed by Sir Alfred Slade.

Mr. ALLAN BRUCE complained that no notice of the previous meeting had been given him, and no notice last night of the present Meeting. He thought that if their privileges were to be affected in the way intended by the Council, it ought to be done courteously, as a question of good faith and gentlemanly feeling as much as a question of people acting for them to protect their interests, and not the interests of Her Majesty's Exhibition Commissioners of 1851. The whole question seemed one of much wider ground than one merely as between the Fellows and the Council. He made the charge that good faith had not been kept by the Council to the Fellows [hear, hear]. They ought to consider the circumstances under which the whole of that neighbourhood had been improved—under what circumstances people had taken their houses—what sums of money had been put into the pockets of people who owned the land, whether Commissioners or not—and into the pockets of contractors who built the houses—and how the value of the property had been increased [loud cheers]. One of the chief inducements for coming to that neighbourhood was the power to go into the Royal Horticultural Society's Gardens [hear, hear]. They wanted it for themselves, their families, and friends, and there were very few people in the neighbourhood who had not taken tickets for the Royal Horticultural Gardens, who were not entitled to the privileges of these Gardens, and who did not look upon it as a question much wider than that merely between the Fellows and the Council as to whether the privileges of the Gardens were to be reserved for the Fellows of the Society [hear, hear]. These were the views he had intended to bring before the Meeting had the Council persisted in moving the adoption of the Report. As it was they had found the Council out [loud cheers]. They had found out what the Council were doing. As a body, one-half of the Council belonged to the Royal Commission.

General SCOTT (interrupting).—I am the only one belonging to the Exhibition of 1851.

Mr. BRUCE.—What about Mr. Kelk?

Mr. KELK.—I am not one of them.

Mr. BRUCE begged to apologise. Well, the Council and the Society have said the Report is to be withdrawn because they are ashamed of it, and if there is a vote of confidence brought forward we will let them find out what our feelings upon it are [cheers].

The CHAIRMAN.—The Duke of Buccleuch has not attended the Council meetings at all. I may say that notices of the Meeting were inserted in the *Times* and *Standard*, and I am very pleased to see so full a Meeting.

Mr. HAUGHTON thought a special notice ought to have been given of so important a Meeting as that [hear, hear]. This was quite an exceptional case to those in which the Fellows did not care to attend in order to transact the ordinary business of a meeting. He had come to the Meeting with a wish to support the Council, and he thought they were in some sort partners with the Commissioners. The provisions read by Sir Alfred Slade showed that the Society held their land upon most favour-

able terms. The land had been given to them on terms such as they could not get in the market, and they were bound, he thought, to act harmoniously with those who were their partners [hear, hear]. He wished that these Gardens and the buildings surrounding them, and the Albert Hall, should work as far as possible in union—one with the other, so as to confer the greatest possible benefit on the place [hear and no]. At the same time they had to consider what were their own rights and privileges respecting the Gardens, and he thought that the conditions offered to them were absolutely unsatisfactory, as the most valuable of their privileges would be taken away without getting anything in return [hear, hear]. If the Council had reduced the number of tickets to one-half, and made them freely transferable, he could have assented to some slight modifications

in some of the subsequent clauses not expressed so clearly as they ought to be, and then he could have given the propositions his hearty support. As it was, he declined to join in the imputation of motives on gentlemen sitting at the Council-table [cries of hear]; indeed, he felt strongly that such imputations ought never to have been made.

Mr. BRUCE.—Oh, no imputations were made.

The CHAIRMAN.—Well, gentlemen, the question before us is—Whether the Report of the Council be or be not adopted?

A FELLOW.—That Report, I understand, is withdrawn.

The CHAIRMAN.—No; it was placed over until this day for consideration, it being agreed that certain resolutions of Sir Alfred Slade were added by the Council. The Council do adopt these resolutions in their Report.

Sir A. SLADE.—I think not.

A FELLOW.—The Commissioners tender an agreement to the Council of this Society.

Sir A. SLADE.—No; the Council tender it.

The FELLOW.—No, I am stating the case correctly. The Council intend proposing certain modifications in the agreement.

The CHAIRMAN.—You are quite right as far as you go.

The FELLOW.—The nature of these modifications I do not know, but on acceptance of them by this Society, Her Majesty's Commissioners will withdraw their proposals. That being so, I do not see how it is in the power of the Council to lay these propositions before the Meeting.

Sir A. SLADE.—They have not withdrawn the propositions.

The CHAIRMAN.—This document has never before been sent to Her Majesty's Commissioners. We knew nothing of what the Commissioners thought until this morning, when we received the letter I have read to you. We have nothing to do with the Commissioners, mind, in this matter. The Council are not influenced by them in any way whatever. Knowing this document was coming before you to-day for your assent or disapproval, the Council recommended a course for your adoption. That is exactly where it is. We have nothing further to do in this matter than to show the way in which the Commissioners are now meeting us. According to this proposal, they say they will have nothing to do with any propositions. The whole thing is broken up, and we go back to the subsisting arrangements previously to this correspondence. The motion is—"That the Report of the Council be not adopted."

Mr. HIBBERD rose to move an amendment [cries of "order," and "divide."]. He should be very brief. Last week they were taken by surprise, and to-day also. It seemed to him advisable to make terms with the Commissioners if they could—"No, no!"—and for the future to keep as far apart from them as they could



Barkeria elegans. (For description see page 166.)

[Hear, hear.] To do all these things would require time, because a considerable majority of the meeting had not mastered the elements of the case. Like Mr. Godson he had looked at the balance-sheets—one showing £13,000 odd and the other £15,000 odd—and he required time to know what they meant. There could be no good reason for taking the Fellows by surprise. If the Commissioners wanted an answer immediately, in order to prepare their programme, they should be told the Society required time; and if they could not prepare their programme, it was no affair of the Society. He begged to move that the Meeting be adjourned to that day week. [No, and time.]

The amendment having been seconded, was put to the Meeting by the Chairman, and declared lost.

Sir COUTTS LINDSAY, Bart., expressed his regret that the Council should have caused such a feeling amongst the debenture-holders. He thought that, as had been already expressed, it was a great mistake for the Council not to have given all the debenture-holders due warning and information of what was going to take place [hear, hear]. The Fellows had been, in a certain sense, trapped into a course they did not think right.

The CHAIRMAN then put the motion that the Report of the Council be not adopted.

When the question was put, Sir A. SLADE, who was sitting in the front seats, stood up, and loudly addressing the Meeting (to which the Chairman was only partially audible), said to them a couple of times "Hands up against the Council."

The result of the show of hands as decided by the Chairman was as follows—For Sir A. Slade's motion, 86; against it, 14. Majority in favour of motion, 72. The result of the voting was received with loud and prolonged cheers.

Sir A. SLADE, addressing the Chairman, said, Have you any announcement to make to us?

The CHAIRMAN.—I have no doubt the Council will place their resignations in your hands. Allow me to say I can make no proposition as a Council until the Council meets, when you will learn what our feeling is on the expression of opinion of the Meeting to-day, and that will be as soon as we can meet together.

Sir A. SLADE.—A great many Fellows have come here to-day from a great distance at a great expense. When are we to have an answer?

Several FELLOWS.—Adjourn for an hour [no, no].

The CHAIRMAN.—No. The Council will take time to consider the question.

A FELLOW remarked that when they had upon the Council a body of gentlemen of such ability, and who had paid such attention to the affairs of the Society, they could not ask them to give an immediate answer to the vote just passed, which he assumed they took as a vote of want of confidence [hear, hear]. It was a vote very warmly expressing that the majority of the Society did not join in the views expressed by the Council. There were many gentlemen, no doubt, on the Council who would be inclined to give a further consideration to the matter [order, and chair].

Sir A. SLADE.—I heard Lord Henry Lennox say the Council would resign.

Mr. KELK.—We are only a part of the Council, and it would not be right for us to speak for our colleagues. As we of the Council present feel, I can say we will place our resignation in the hands of the Society [cheers].

Mr. LINDSAY.—The Council is composed of gentlemen who will not play any tricks [hear, hear]. And I shall now move a vote of thanks to the Chairman for the manner in which he has conducted the proceedings on the present occasion [hear, hear].

Mr. HARDCASTLE, M.P., cordially seconded the motion and hoped the Chairman in acknowledging the vote would pledge himself and his colleagues to resign their positions in the Council of the Royal Horticultural Society [no, cheers, and much interruption]. He did not mean that they should resign as individuals, but as a body [no, no, and hear hear], because if individual members resigned the gentlemen now present could elect persons to take their places, so that they would not have the old Council there again [cries of adjourn for a fortnight].

A FELLOW proposed that Sir A. Slade and Mr. Hardcastle, M.P., should be appointed as a Committee, to confer with the Council [no, no].

The vote of thanks was unanimously carried.

The CHAIRMAN.—Let me just bring you to common sense. The affairs of the Society must go on. It is quite right and proper we, as a Council, should resign; there is no alternative. In the meantime something should be done to see that the affairs of the Society go on properly. It would not be right for us to say, "We all resign, and do your best" [hear, hear]. We will do our best until you find some one to take in hand the reins of government of the Society. We have all done our best, and we will continue to do so until a general meeting is called, when you will have to elect as a Council those men who will do what is right and proper in your minds. That is the common-sense view of the matter. We will still meet as a Council, and afterwards you can take your own steps to carry on the affairs

of the Society. I am very much obliged for the vote of thanks passed to me [hear, hear].

Mr. ALLAN BRUCE asked the Chairman whether he would undertake to send by post to every Fellow an account of what had taken place at that Meeting, of the result at which the Council had arrived, and the object for which the next meeting would be summoned?

Sir A. SLADE.—Yes, three days before the meeting. Say yes or no.

The CHAIRMAN.—We have some 3500F fellows; if this expenditure is to be undertaken, of course, it must be.

Sir A. SLADE.—You are bound to do it.

The CHAIRMAN.—I will pledge myself to this:—As soon as the Council has met and come to a decision to resign their position into your hands, every one of the Fellows shall have notice of it. [Hear, hear.]

Sir A. SLADE.—At the next meeting?

The CHAIRMAN.—We shall have nothing to do with that—we shall resign.

Sir A. SLADE.—Then we shall be without a head.

Mr. BRUCE said what he understood was that merely the result of the Meeting would be communicated, and the resignation papers thereupon, and the Council would then cease to exist. The Society would then be a body without a head; and it would be very awkward for them to be placed so. The only alternative would be to elect some body, including several Members of the present Council, to represent them.

The CHAIRMAN.—You have mistaken me. You said that virtually you would be without a head, but the fact is, your Council will not cease their action until you have appointed another.

Sir A. SLADE.—Then you will call another meeting?

The CHAIRMAN.—That will be the result of it.

The Meeting then closed.

THE resignation of the Council is an event in the history of the Royal Horticultural Society, unprecedented in the long period of seventy years during which the Society has existed. Those who read carefully the ample report we were enabled to furnish of the Annual Meeting held last week, might have anticipated some such result to take place at the adjourned Meeting held on Tuesday last; and though the event took many by surprise, to those who have watched the course of events for some years past, the wonder has been that the crisis has not happened long ago. There are bounds beyond which endurance cannot go, and the propositions submitted by the Royal Commissioners of the Exhibition of 1851 to the Council of the Society, and which were published in our last week's report, were of such a nature as to goad the Society into a condition of indignant rebellion.

Ever since the connection between the Royal Commissioners and the Society was established, the relation between the two has been one of exaction and oppression on the one hand, and of abject concession on the other. The life of the Society since 1864 has been a struggle for existence from a cunningly conceived design to absorb it into the South Kensington system. How succeeding Councils could have been cajoled or fascinated as they have been into some of the most absurd and suicidal arrangements is beyond the power of ordinary mortals to divine; but that such has been the case was so apparent to all who cared to watch the progress of events for some years past, that no other result than that which has at last come could reasonably have been expected.

Where the late Council has been manifestly in the wrong is in accepting as a foregone but erroneous conclusion that "the Society is bound hand and foot" to the Royal Commissioners, and that whatever propositions emanated from them, no matter how adverse they had been to the interests of a Society founded for the advancement of horticulture, and for that purpose alone, they were either bound to accept them or to submit to the extinction of the Society as the only alternative. In this respect we have always regretted that the Council did not act with greater decision and more independence. And yet perhaps as individuals the Council were not altogether so culpable in this respect as may at first sight appear. The mode which has obtained of late years of electing and re-electing the same men is entirely responsible for this—there has been so little infusion of new blood on the Council for many years past in the shape of working members. Any new names that have appeared have been representatives of men who attended the meetings only in few instances, and the business and interests of the Society were entrusted to the care of the same individuals from year to year who were imbued with those foregone conclusions.

Nothing could have been more objectionable in a popular

Society like the Royal Horticultural, than the way in which the Council were nominated; and what renders the system doubly objectionable is that the bye-laws under which this system is practised were specially framed in opposition to the spirit of the charter, no longer than eleven years ago. It is a significant fact that this revision of the bye-laws, and the introduction of the objectionable clauses were adopted immediately upon the accession of Mr. Henry Cole, C.E., to the Council; a gentleman to whom rumour properly or improperly attributes the whole of the unwarrantable interference with the free action of the Society, of which the Royal Commissioners have to bear the stigma.

We cannot but regret, in the resignation of the Council, parting with the names and presence of many men who are endeared to the memory of all true friends of the Horticultural Society, names historically associated with it and with horticulture. We could have wished that the tide of affairs had taken a different turn, and to have seen those names still preserved among us; but the late Council has only reaped that which it has unconsciously sown. We part from them with many regrets; and with none of them more than the late much esteemed Secretary. It was a difficult part which Major-General Scott had to play, and we doubt much if any other man would have done it so well. We make no apology for singling out General Scott from the rest of the Council in these remarks, for his name was so freely used, and he himself dragged so prominently forward in the late discussions, that we express the feeling of every horticulturist, that although General Scott's position made it often difficult for him to concede all that could be desired, his conduct and dealing with the Society were always such as to have left on the minds of horticulturists a feeling of sincere personal regard towards him.

And now that the crisis has come and the administration of the Society will fall into other hands, we trust those who have taken the initiative in this matter will not forget the old traditions of the Society, and the objects for which it was founded. All the troubles which defunct Councils have had to encounter have been brought about by a greater or less neglect of horticulture, and in forming the new Council it will be a matter for serious consideration what will be the result if a majority of its members are not horticultural members. We do not mean that they should all be practical or professional horticulturists, but they must at least be patrons of horticulture; and just so far as any Council that is to be formed neglects the primary object of its existence, or estranges itself from the horticultural interest, it too will also reap what it has sown.

FORCING STRAWBERRIES.

THERE are various causes of failure in forcing Strawberries, often only known to those who have charge of the plants. Some failures arise from weak plants to begin with, the result of not having time, or rather being able to layer the runners at the proper time; some from not shifting the plants into the fruiting pots in time to fill these with roots before growth has ceased; some from manure water improperly administered; and others from ramming the soil so firmly in potting that the roots cannot penetrate the soil, nor water pass through; and many plants, no doubt, are lost through starting them in too great a heat when first started.

Having been engaged in Strawberry forcing for nearly twenty years, I am fully aware that no gardener can reasonably expect to be successful unless he prepare and carefully attend to his plants from the time of laying them up to the time of storing them away to rest before taking them into the forcing house. In every garden where any considerable quantity is required it is always best to plant a piece of ground, or rather a border, for that purpose alone. The sorts to be forced should be planted in the open ground or border a foot apart, in rows not less than 4 feet from each other, to enable anyone to layer them so as to be fully exposed to the sun. I consider the stepping-stone to success is to secure good sturdy plants at first, and endeavour to keep them so, instead of the long and lanky plants we so often see where a large quantity is required. Some gardeners use small 60-sized pots for layering, but in this case, if the plants are left too long in the pots, they are so apt to become potbound, that they are a long time before they make a start when they are put in the fruiting pots.

I find the quickest method of securing plants is to put fresh soil between the rows, press it down firm, and then layer clear from the old plants. They make the best plants of any for forcing.

Layer the runners as soon as they are large enough, putting down a small peg or a stone just to hold the runner firm till it make roots. A man or lad can layer a thousand or two in a very short space of time, and if he just count the pegs or stones before he commences he can soon know when he has the required number.

When the runners are well rooted no time should be lost in getting them placed in their fruiting pots. The soil, which should have been prepared beforehand, should consist of fibrous loam, with one-third part of rotten manure, and, if possible, some soot or wood ashes should be mixed with it as a check against worms. The pots should be carefully crocked, and a dusting of soot should be put in the bottom to keep the worms out. The soil should not be too wet, but just moist enough to make it firm without being clammy. It should be squeezed in with the hand and not rammed in with a stick—I have seen some ramming it in as though they were putting in a post. The collar of the plant should be just a trifle below the rim of the pot, leaving fully half an inch for water. As soon as the roots have reached the sides of the pots they should be supplied with weak manure water, and as the plants grow the surface should be stirred occasionally, and more space should be afforded between the plants to prevent their leaves becoming drawn. From the time of potting up to the time of resting, the plants should never be allowed to get dry enough to flag, as nothing is more fatal. They should be frequently looked over, and if there be any weak ones among them it is far better to throw them out at once than to leave them and have to do so at last.

When the plants are ready for resting, before you force them, if room can be spared, by all means place them in-doors, but in many places this cannot be done; then the best way of storing is the old-fashioned one of piling the pots on their sides in ridges with coal ashes on a north border. Before bringing in the plants for forcing they should have a top-dressing of strong loam and rotten manure; the drainage should be examined, and the pots washed.

Care should be taken not to put the plants in great heat at first. From 45° to 50° should be the highest temperature at first, and let it gradually rise as they begin to start into growth. They should not have too much water until the flowerstalks begin to show, but afterwards never allow the plants to get dry till the fruit is ripe. When the plants are in flower they will be benefited in bright sunny days by going over them and gently shaking the blooms, and if the weather permits air should be given both top and bottom, so as to have a free circulation through the house or pit. As soon as the fruit is set give plenty of manure water, weak at first and stronger by degrees; good clear cow or sheep dung water is the best.

The varieties I have always found the most certain are Keens' Seedling, Duc de Malakoff, Sir Charles Napier for late forcing, with British Queen. Black Prince I can never depend upon. The only drawback to Keens' Seedling is that its fruit is not suited for travelling, but for home use I believe it has no equal. Mr. Radclyffe, Dr. Hogg, President, and Sir J. Paxton I have tried, and sometimes they have turned out good and sometimes the reverse. They cannot, in my opinion, be depended upon as so sure as the three first-named kinds.—LANCASHIRE SUBSCRIBER.

CONDENSED MOISTURE IN GREENHOUSES.

A PERSON who really delighted in a pretty cool greenhouse, with a few Vines up the roof, abutting against the principal living-room, and communicating with it by a close-fitting door, has written that he was quite alarmed about the house furniture, &c., because morning after morning there was such a deposition of moisture on the inside glass of a handsome window on the other side of the room. Visitors and wise folk laid it to the much-loved greenhouse, closed door and all, and that, too, though upon an average, whilst this alarming moisture was at its height, the general temperature in the greenhouse was much lower than the temperature of the living-room. The blame-greenhouse-theory upholders seemed at first to have it all their own way; "For see," said they, "the next room is just similar in size to this sitting-room, and everything else similar, except the accompanying greenhouse, but in the latter room there is little or no deposition of moisture on the inside surface of the glass of the window!" Satisfactory though this seemed, we think it was a striking instance that we can rush too quickly to conclusions. On inquiry it was found that everything was not similar in the two rooms. In the greenhouse-sitting-room there was a good fire to keep it comfortable; in the other room a fire

was only used occasionally. In the first case, then, besides the vapour in the air that went up the chimney, the bulk of air in the room, with its vapour, was heated, and expanded, and brought into contact with the cold glass, acting as a condensing medium, and wringing out the watery vapour, as it were. In the other unheated room, the comparatively quiescent and cold air, with its cold vapour, could be but little acted on by the cold plane of glass in the window. The greater the difference between the high temperature within the room and the low temperature outside the window, the greater would be the condensing power of the latter on the vapour in the air inside, so long as there was vapour left to condense.

In a similar case, where a greenhouse was blamed—it was separated from the living-room by a glass door—it was found that the glass door was dry, or nearly so, in the morning, whilst the glass of the window on the other side of the room would be found covered with water. Why the difference? Just because the glass was exposed to different temperatures, and was the best condenser when it was coldest and came in contact with the hotter air.

We wish to give this matter prominence—first, because the blame-greenhouse advocates are not at all convinced; and secondly, because if they succeed in persuading people of the effects of damp, &c., thus produced, hundreds may see reason to deprive themselves of a great source of pleasure in having a greenhouse or a conservatory easily entered from the chief living or other room by opening a door. We candidly believe that, attended to with care as stated, there will be no danger whatever—quite the reverse.

Many in speaking on such matters forget the simple principle that the power of any substance to condense the vapour in the air into water will greatly depend on the low temperature of that body as compared with the temperature of the air. Our younger readers and beginners will forgive us if we give them three simple well-known facts, on which they may generalise and form what they think a right conclusion. First, take a clear crystal glass and fill it with cold water, and take it into a room about as cold, and the crystal will remain clear and pellucid, and you can see the water through it. Take a similar glass of water into a room some 20° warmer, and the sides of the glass will become dulled by a deposition of moisture. Secondly, put on a pair of spectacles in the open air and you may wear them a long time without wiping them. Pass at once into a hothouse some 10° to 20° warmer, and how long could you see through your spectacles? They would be covered with dew at once. Thirdly, cut a bunch of Grapes in an airy house, carry it in the open air, and go into a moist hothouse, and every berry would be covered with a fine dew, because every berry, from being so much colder than the air of the house, becomes at once a condenser of the moisture in it.—R. F.

NOTES AND GLEANINGS.

A MAN in Crittenden county has made an experiment designed to ascertain how far SOIL is PROTECTED FROM COLD BY SNOW. For four successive winter days, there being 4 inches of snow on a level, he found the average temperature immediately above the snow 14° below zero; immediately beneath, 10° above zero; under a drift 2 feet deep, 27° above zero.

—WE have received the new edition of Mr. Rivers's "Orchard House," a work now so well known, and which has repeatedly been so favourably noticed in these columns, that it is only necessary for us to say that it has reached the fifteenth edition.

—IN Watowan Co., Minnesota, SUNFLOWERS are raised for fuel. The oily seeds make a hot fire, and the woody stock, when dried, furnishes a good substitute for cordwood, which is very scarce in that region. It is estimated that two acres will produce enough to last an ordinary family through a long winter.

—HER MAJESTY'S COMMISSIONERS for the VIENNA EXHIBITION have allotted 22½ square metres of space to Messrs. James Carter & Co. for the display of their collection of models, &c.

PRINCE ALBERT PINE APPLE.

THE unknown origin of this magnificent Pine is not more surprising than its scarcity in the country. Though my knowledge of its existence dates back about a score of years, yet how many Pine-growing establishments can boast of containing as many plants? Certainly its demerits cannot be assigned as a reason for this regretted unpopularity, as it is justly admitted by all who have had an opportunity of judging, that it possesses every quality necessary to constitute a first-rate Pine. My own opinion places it second to none but the Smooth-leaved Cayenne. The latter I regard as the best of all Pines. One can rely on its starting into fruit at a given time, independently

of all the starving fit-and-start operations too often practised on Queens; and there is a positive certainty of its blooming and swelling well during the dullest seasons. It has also the great recommendation of possessing an unvarying first-class flavour.

The fruit of Prince Albert in shape resembles a cone having a broad base tapering to a very small apex; it averages from 12 to 15 inches in height, and has a remarkably small crown—so small indeed that the crown of an 8-lb. fruit is rarely more than 2 inches high. The flavour is nearly equal to that of the Smooth-leaved Cayenne in winter, and improves during summer. In colour it is blended with the bright yellow of the much inferior variety, the Envile, and the dark hue of the finely flavoured Black Jamaica, the whole slightly tinted with a delicate red. What a gratifying and memorable sight to the Pine-admirer would be a houseful of this variety on the eve of maturity. Mr. David Thomson, in his recently published practical treatise of "Fruit Culture Under Glass," describes it as being a "compact grower, free fruiter; flesh soft, very juicy, and well flavoured. A most desirable variety in every respect." Assuredly the noble examples I saw while at Drumlanrig last autumn gave manifest proof of its fully meriting the above description. I may state that the variety sometimes known as Prince Alfred is wrongly named, and identical with Prince Albert.—J. M. C.

ELECTION OF ROSES.

ACCORDING to the Rev. W. F. Radclyffe La France Rose does not bloom freely in Dorset. With me it is very different. Last season one of my trees of this variety put out from the centre of the plant a branch which had about sixteen buds fully expanded at one time. This Rose, above all others, I think, was the most admired. All my plants, even to cuttings 6 inches in height, bloom most freely. It is a good grower, very hardy, and has fine foliage. It begins to bloom with me out of doors about the first, and continues until nearly the last. I must also say a few words with respect to Madame Augusta Verdier, which he recommends us to read Madame Eugénie Verdier. If I am right, it only came out in 1870 or 1871; therefore it cannot be the same Rose at all. The description I have of it is, pale pink, edges silvery, bright and clear, the colour excellent; of extra large size, very double, and beautifully formed. It is a Rose of the finest quality, and its colour is not subject to fade. Who could wish for a better qualification?

There is another Rose which does not appear to be known much to your numerous readers, as it has not yet been even mentioned—that is, Velours Pourpre (1870). It bloomed with me last year very well. The colour is a rich velvety purple; the flower is cupped, large, and full; the foliage handsome; the plant a vigorous grower. It is said to be first-class for exhibition, and I have no doubt it will prove to be so. I may also say that I was astonished to find Emilie Hausburg so very low in the list. I have grown it from the first, and I must confess that as yet I have not had a bad bloom. Perhaps in another election we shall see it take a higher place.—T. LISTER.

I CANNOT understand how it is that Marie Banmann does so badly with Mr. Eyre and Mr. Radclyffe, unless it be that they have tried it on the Manetti only. Here (about twenty miles due east of London) I find it will not flourish on that stock, but on short Briars, 2 to 3 feet, it does well, growing and flowering most satisfactorily. I have two hundred plants of it of various ages, the six oldest being those I had from Mr. Cant the year after it came out, all, old and young, growing vigorously. I have one hundred plants from buds of 1871, which last summer made splendid wood 3 to 4 feet long, with good strong side shoots. Indeed this Rose is such a favourite here that as I think if I were obliged to grow only one variety, this would be the one; I should certainly place it in the first three. Besides being a good grower, it is so constant that on several plants last summer I could have cut at one time four or five blooms all fit for a box of twelve at South Kensington.

Mr. Radclyffe is right about Mdle. Marie Rady; it is a first-rate grower, and a truly splendid flower, and, I think, not sufficiently known and grown. The season of 1871 seemed to suit it here exactly; it was not quite so good last season, but then what a season we had!

Mr. Radclyffe having condemned Marie Baumann, says La France does not open well with him, but he recommends Souvenir de la Malmaison and Triomphe de Rennes as two of

the best six Roses for general purposes. It is clear that some Roses are very capricious; for, singular to say, whilst both La France and Marie Baumann grow and open here as well as I could desire, I can do nothing at all with either Souvenir de la Malmaison or Triomphe de Rennes in the open ground. I have tried Souvenir de la Malmaison on Briar, Manetti, and its own roots, but, although the plants have grown well, I have never been able above once or twice to get the buds to open; they always go off brown instead of expanding. As to Triomphe de Rennes, it will not even grow here in the open ground. I have tried it on Briar, Manetti, and its own roots with the same

result—viz., weak wood, invariable shedding of the foliage as soon as it is fully expanded, and consequent diminutive flower buds, most of which do not open. I am glad to be able to add, however, that having at last tried it as a pot-plant on the Briar I now get sound healthy wood, persistent foliage, and fine blooms. I take this opportunity of recommending Marie Van Houtte (a Tea of 1871) as a pot-plant for early forcing. I have had some beautiful blooms of it. In shape and fulness they reminded me of Madame Bravy, but the colour is a pale primrose or sulphur. It is a very nice Rose indeed, and quite distinct.—R. B. P.

NEW ZEALAND DRACÆNAS.—No. 2.

DRACÆNA AUSTRALIS.—The subject of these few notes is a fitting companion to its nearly-related species from New Zealand, upon which a few remarks appeared at page 8 of the present volume. It rejoices in the various names of Cordy-

line australis, Charlewoodia australis, and Dracænopsis australis. The last name is considered the most correct, having been separated from the old genus Dracæna by Dr. Planchen. The new genus is characterised by a "six-parted marcescent campanulate perianth, with the segments biseriate; six stamens inserted at the base of the perianth segments; a three-celled ovary, with many ovules in each cell; and a pea-shaped berry containing several seeds in each of its three cells." So much for the botanical part of the subject, which I do not fancy will be a sufficiently powerful argument for the amateurs of the present generation to adopt the genus; but if we do not adopt it ourselves we must impress it upon the minds of those who are younger aspirants to fame in the horticultural world.

I will now say a few words upon this plant in a cultural way. The illustration, I must say, does not give a sufficiently good idea of the plant's beauty, for it certainly must be ranked amongst the most beautiful ornaments of a greenhouse or conservatory at any season, the intense rich deep green of its leaves affording a relief to the eyes, be it at mid-summer when the glaring sun has nearly dazzled us, or when

the snow lies deep upon the ground, as it does while I write. It is always presentable, always charming, and therefore to all who have room I say, Secure a plant of this my favourite plain-leaved Dracæna. This species is not so hardy as its



Dracæna australis.

relatives before noticed—at least that has been my experience with it, and therefore I would not advise its use in the open air during summer, because I have noticed its broad and somewhat soft leaves are apt to become bent down and broken by winds that leave such kinds as *D. indivisa* and *D. lineata* unscathed, and when this occurs the symmetrical beauty of the plant is gone. It is a noble plant, producing leaves some 2 or 3 feet in length, and nearly 4 inches in breadth; in shape they are oblong lanceolate, and in colour rich bright green. It carries a splendid crown of leaves, and, as before remarked, is one of the most beautiful ornaments for a cool house. In potting drain well, and let the soil be a mixture of peat and loam, adding to it a

fair proportion of silver sand; or, when this cannot be procured, sharp river sand, or even road scrapings will be found equally serviceable for the majority of plants, although it is not so good for the purpose of propagation: therefore, my fair amateur readers, be not dismayed if you cannot procure the best (that is Reigate) sand to keep the soil open and porous, for any kind that is free from mud will suit the New Zealand Dracænas.—EXPERTO CREDE.

EVENING MUSINGS FOR PLAIN PEOPLE.—No. 1.

A VINERY, large or small as the case may be, is becoming a common adjunct to the residences of almost every class whose means enable them to have these very enjoyable structures. Enjoyable they certainly are, and also beneficial; and perhaps their pleasures and benefits are felt by no class of men more than those in office pent all day long, whose mental work, insidiously enervating, calls for a change giving repose from the business or professional strain which their vocation entails. The real benefits that a garden affords in this respect are immeasurable and incalculable. Hundreds can bear testimony to this amongst clergy, lawyers, doctors, and others, who have their respective happy hunting grounds amongst Roses, Gla-

dioli, hardy fruits, or in-door plants and Vines. Instances of this have come under my special notice within a radius of a very few miles, and which are only samples of the great aggregate number spread over the whole country. Not long ago, in looking into an amateur's vinery, the owner's son remarked, "This is my father's great solatium. I don't know what we should do without it. He used to come home with the anxieties and responsibilities of his business pressing heavily on him, making him sometimes moose and irritable. He now comes home and spends an hour here in picking, potting, watering, and training. He forgets the cares of business, and is better, and we are better too." Another, a medical man of

great practice, made this remark to me when looking through his little houses together, "All the spare time I can find from doctoring others is spent in here doctoring myself." A clergyman also, with the heavy work of frequently three Sunday services before the same congregations, said to me in effect during a garden walk, "You cannot think what a relief and aid this garden is to me. I often feel spent, depressed, and feeble, and in a short run round I see the works of an Almighty Hand ever vigorous and smiling, when my energy is restored and my duties made easier to myself, and, I believe, more effective." Further, I can see almost every morning of my life a gentleman past the allotted age of man, whose days are spent in the superintendence of and directing the largest banking establishment in the county; but neither the labour and responsibility of this great business, the anxieties necessarily connected therewith, nor advancing years, appear to impair the pristine vigour of mind and body which seem steelled for all exigencies. Is not one great contributory cause of this found in the daily visits to his garden and through his houses, inspecting, admiring, and suggesting? I believe it is—indeed I feel as certain as I am of anything, that it is not pleasure merely that his garden affords, but real benefit, and I am not alone in this opinion.

Gardening in its different phases by amateurs is not only enjoyable and beneficial to them, but by and through them is made beneficial to others. Amateurs very frequently confine their efforts to perfecting one special branch, and after attaining proficiency are, by their position, peculiarly able, and generally disposed, to impart the information they possess for the benefit of others. Practical gardeners, however able, are really indebted to this class of men for much interesting information, and they in turn are generally willing to give a hand in assisting others wishful, yet lacking sufficient knowledge, in making a start in any particular line of gardening. Any hints for the guidance of such cannot be too plain and practical, nor too simply expressed. Elaborate writing and attempts at scientific reasoning are of quite secondary importance. As a rule, instruction is generally the best and easiest to work by when given on the assumption that the instructed knows little or nothing of the matter treated of by the instructor.

After these musings—perhaps not altogether out of place and unseasonable—I venture the attempt of a few plain notes on Vines, &c., solely for the guidance of the uninitiated. A vinery is one of the most useful of garden appendages. It can, besides giving luscious fruit without great cultural skill, be turned to account in providing and preserving plants for the flower garden, for there is no real reason why Vines and bedding plants will not associate together and both prosper. And if bedding plants are not required, other things interesting and beautiful may be grown with the Vines, notwithstanding the reiterated advice that Vines must have a house to themselves. This advice, sound enough in itself, but too dogmatic and exclusive, is calculated to have a deterrent effect on the minds of certain people who desire both Grapes and plants, while they can only manage to erect one house. But enough for the present. I will resume the subject another week.—*J. W., Lincoln.*

ECONOMY IN FUEL.

WHEN I designed my double-glazed house I imagined that, in consequence of the small amount of radiation from the glass, there would be a great saving in fuel, and that probably coals might be dispensed with altogether. During the last three months I have had sufficient experience to prove that I have not been mistaken in my views. In front of the saddle-back boiler I constructed a brick oven capable of containing large roots, rotten posts, and other useless wood and rubbish. Half a ton of coals were carted into the stokehole, in case they might be required. I find that 1 cwt. has been used, but not because it was necessary. I have carefully watched the night and day temperature, and find that it has been invariably at night 45°, and from 50° to 55° during the day; the temperature might have been higher had there not been sixteen 2-inch apertures, 6 feet apart, in the floor of the house, opening under the hot-water pipes, which, with the open cross ventilators in the ridge, caused a constant brisk motion in the air of the house night and day. However, at this low temperature the Peaches and Nectarines are in fruit, and the Vines also coming on fast, all looking remarkably strong and healthy. The door of the oven, 2 feet square, is outside, but the oven itself is built inside the house; the top of it, 4½ feet by 3, forms a good

bottom-heat arrangement and Melon bed. The flue—a 6-inch iron pipe—is also inside the house, the harsh heat from it being kept down by its being enclosed in a terra cotta pipe filled with watered sand. This oven is not in contact with the earth, there is a space between, and the air heated in this space passes into the house rapidly through a 4-inch aperture in the floor, the draught being caused by an aperture outside on a level with the firebars of the oven. The whole of this house, with the heating apparatus, was complete from the first, and we have had no occasion to make any alteration since. When the ventilators and apertures in the floor are closed, it is airtight if necessary.—OBSERVER.

THE YUCCA.

THE Yuccas may assuredly be classed amongst plants having a tropical appearance; for although they neither require a tropical heat nor the unclouded sunshine of climates usually termed temperate, these plants are nevertheless sufficiently distinct from those commonly regarded as hardy. In most parts of the south of England the species usually termed *Y. gloriosa*, *Y. aloifolia*, *Y. recurva*, and *Y. filamentosa* not only stand the winter well, but flower in favourable seasons. Their flower-stems, it is true, are not so plentifully produced as those of Hollyhocks or Pelargoniums, but they have a charm of their own which florists' flowers do not possess, and at all times present a neat though rather formidable appearance. When a Yucca is once established in a particular spot it is rarely meddled with afterwards, except to propagate it; for the growth of the plant being slow, few like to disturb one when it has arrived at a flowering size. It is not every year that the same plant throws up its unique spike of blooms, although those having a number of plants may reasonably expect one or more every year; and should there be a fine dry autumn and mild winter, a large number of flower-spikes will probably be produced in the following summer, as has been the case here on several occasions.

In the past summer, amongst other Yuccas that have bloomed well on a south border was one of more than ordinary importance, having three fine spikes of bloom upon it all fully out at the same time, and all three as nearly alike as possible, two of them being 10 feet 6 inches high, the third 10 feet 4 inches, and all perfectly upright, as, in fact, all Yucca flower-spikes usually are. They also stood sufficiently far apart to be clear of each other. The plant which produced them is an old one, and the portion which bloomed last year was an upright naked stem with three branches, and destitute of leaves for between 3 and 4 feet, then there was a tuft at each of the points, out of which the flower-stems sprung. Another portion of the same plant did not flower. I do not remember ever noticing as many as three spikes on one plant before, and but rarely two. Individually the flower-spikes were quite as good as in plants sending up only one spike, and better than in many, but we have had much finer in former years; however, in the past season 9 feet, 8 feet, and as low as 7 feet 6 inches were the general run for the tall species, and for *Y. filamentosa* still less. The flower is so handsome, and the plant altogether so unlike most hardy subjects, that I should be sorry to part with the Yuccas on any account.

The situation in which the Yuccas are growing is a very dry one—a south border against a terrace wall, with good shelter in other directions. The soil is highly charged with calcareous matter—in fact, the subsoil may be said to be decomposed limestone, but it is well adapted for the growth of many kinds of shrubs and trees. From some trees of *Magnolia grandiflora* growing against the mansion only a few yards from the Yucca border a dozen or more fully-expanded blooms could be gathered at one time. We have also Yuccas growing in other places as well, and they flower more or less freely according to the character of the season. In making alterations some years ago, several Yucca plants were stored away for the time being in a piece of outside kitchen-garden ground, the soil of which was rather stiff and moist, and not being all wanted again, they were allowed to remain. Several of them have bloomed in favourable years, and look well; others as single specimens in conspicuous places seem also at home.

The only drawback to the general cultivation of Yuccas is their slowness of growth and propagation; but old broken-down or cut-down plants emit a number of shoots, which, after attaining some size, may be taken off like Pine suckers, and will root accordingly. Still the progress of the plant is so slow that the amateur sometimes gets out of patience in waiting for

the blooming; but even when not in flower they are fine-looking plants, almost as sturdy as the Aloe, and infinitely superior to it in the beauty of the flower-spike. The principal border of Yuccas here is of considerable length, and 10 feet wide; a retaining wall, 7 feet high, surmounted by an ornamental balustrading, forms its northern boundary, and against this wall Myrtles, Ceanothus, Grishmia litoralis, Swainsonia, and other New Holland plants are trained, as well as Roses, &c.; while the only plants in the border besides the Yuccas are Irises, including a good proportion of the variegated one, Echeveria now and then, and one or two plants of Chamaerops Fortunei, which has stood several winters, and done very well. The border is edged with the Californian Houseleek, and being seen from the gravelled terrace above by simply looking over the parapet, the appearance is good, and when very fine spikes of Yuccas are produced they show as high as the parapet. No single spike of flowers that I know is half the height of a good spike of Yucca gloriosa or its allies, nor is it wanting in grace and dignity. To those having only a few plants of this choice shrub I would say, Take care of them, for some day you may be rewarded by their blooming.—J. ROBSON.

ROSE MARIE BAUMANN.

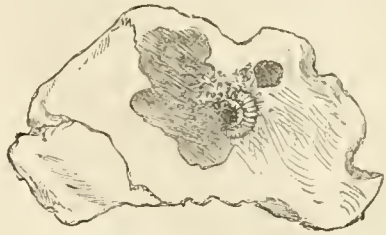
This Rose, if I remember aright, was sent out in the autumn of 1863; very few of the trade in this country were fortunate enough to secure it the first year. I bought it, and after getting-up a good stock exhibited it in my winning stands at the principal Rose shows in 1865. There was no doubt about its being much admired, as very many of the largest growers requested me to let them have a supply. I have ever since grown it every year in very large quantities, and must say that I have always found it a good free grower and quite sufficiently vigorous, and what is very important, it produces plenty of blooms of the very first quality in size, shape, and colour—in fact, it never gives a bad one. I ought, perhaps, to mention that mine are all maiden plants, but I have seen it equally fine on older. I wish any of those who deem this Rose an indifferent grower could look at my stock of it next summer, I am sure their opinion would undergo a change.

By post this week I had a letter from an amateur grower at Whitby, speaking in the highest terms of Marie Baumann. Even so far north, it grows and flowers beautifully.—BENJAMIN R. CANT, Colchester.

NEW VINE DISEASE.

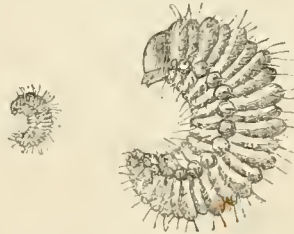
HAVING examined a further supply of excrescences upon the branches of the Vine forwarded by Mr. Roberts, and noticed at page 72, one of which contained the larva which I had supposed might possibly be that of one of the Gall-flies (and consequently that the excrescences were true galls caused by the deposition of an egg by the parent Gall-fly in the stema or buds of the Vine), I am more convinced than I was before that they are vegetable tumours caused by some irregular action of

when hatched. Ordinarily, the larva of Otiorynchnus is found gnawing the roots of succulent or other plants in pots, and it has been very long ago figured in the pages of THE COTTAGE



Section of excrescence with grub inside; the black spot showing the puncture made by the parent weevil when depositing the egg.

GARDENER before it altered its name to THE JOURNAL OF HORTICULTURE. The grub is white, clothed with short stiff chestnut-coloured bristles, and with a chestnut-coloured head, armed with a pair of strong black horny jaws. It must not be overlooked, however, (in regarding these excrescences as not being



The grub, natural size and magnified.

the result of insect action), that some of the weevils do cause galls upon plants, as for instance, upon the stems and roots of Cabbages. But I believe it will be found, in the case of the Vine now in question, that the parent weevil laid her egg in an already-formed excrescence and not in the body of the stem, which subsequently became developed to this extraordinary extent.—J. O. WESTWOOD, Oxford.

CULTURAL NOTES ON PLANTS

AT THE ROYAL HORTICULTURAL SOCIETY'S MEETINGS.

THE Fruit and Floral Meeting of the Royal Horticultural Society on the 12th inst., was again of a very interesting character, and though few prizes were offered by the Society, the Council-room was well filled, and very gay with flowering plants. Notwithstanding the inclement weather exotic Orchids were again predominant, a large proportion being composed of those requiring cool treatment. As cool-house Orchids are fast becoming everybody's flowers, a few cultural notes on some of those exhibited may be useful.

Odontoglossum crispum (Alexandre) is certainly the queen not only of Odontoglossums, but of all the cool section. Some of the varieties exhibited by Messrs. Veitch, of Chelsea, were surpassingly beautiful. One variety in particular had pure white sepals and petals, large, well formed, of great substance, and quite waxy, the lip sparsely spotted. During the winter these beautiful flowers will remain in perfection for nearly three months, and their culture is so simple than any amateur can grow them as easily as he can Geraniums, or any other common plants, and the first cost is not so much as some suppose. Of course, large established plants of selected varieties would cost a great deal of money. Newly imported plants bought from those nurserymen who import them, can be obtained for a very few shillings each, and that after they are fairly established. Then there is the charm of watching their progress until the first young growth is nearly completed, at which time the flower-spike will be thrown up, and to the ardent cultivator there is more pleasure still in watching the expanding flowers in the expectation of something extra fine turning up amongst the batch. At all events, the grower will not be disappointed, as all are good and worthy of culture. I will in as few words as possible explain the cultural treatment they require.

Newly imported plants should be potted in very small pots just large enough to contain the roots. The pots should be filled rather more than half full of drainage; over this place



The excrescence on the Vine stem, natural size.

the plant tissues, especially as the larva proves not to be that of one of the Gall-flies, but is that of one of the many species of weevils which are devourers of vegetable matters, of which Otiorynchnus vastator is one of the most notorious, and which is often found gnawing off the young buds of the Vines, and to which these excrescences would offer an admirable place of deposit of their eggs, affording so large a supply of food to the larvæ

some fresh sphagnum. The plant should be raised out of the pot a little, so that the compost, when it is placed round the roots, will be raised in the form of a mound. The potting material should be tough fibrous peat, fresh sphagnum, and broken pots, in equal proportions, and the broken pots ought to be clean before using them. A moist atmosphere is very essential to the plants, but do not apply much water to the roots until fresh rootlets are formed, when water may be freely applied to them. It is well to dress the surface of the pot with live sphagnum, and when this is in a healthy condition it is a sure sign that all is right with the atmosphere of the house. The flower-spikes come up with the new growths, and generally show themselves when the pseudo-bulbs are about half grown, and by the time the bulb has attained its full size the flowers will be expanded. When the flowers fade the plant will proceed to make a new growth at once, and this will be the time to repot, using the same compost as that recommended above, and pots only one size larger. Nothing is more injurious either to cool or hothouse Orchids than over-potting them, more especially those that require a good supply of water, as however porous the potting material may be, if there is too much of it, it will certainly get sour, and the plants will not thrive. A large proportion of them will not flower the first year, but as all were placed in very small pots it will be necessary to shift them into larger pots as soon as they begin to make a second growth.

There cannot be much divergence of opinion as to the best form of structure in which to grow them. In the south of England a lean-to with a north aspect is the best. In the north they do very well in low span-roofed pits, and these should run north and south. They thrive best in small houses where the plants can be placed near the glass. Ventilation should be provided by having sliding top lights, and a row of small ventilators should be placed in the front or side walls on a level with the hot-water pipes; the latter ventilators should be kept constantly open unless the weather should be very severe.

As to temperature, the collectors say that in their native country these plants enjoy a mean temperature of 65°. We find that in cultivation during the winter months a minimum of 45° is quite sufficient, and even with 5° less they succeed. I have had them out in a cold frame with no covering but the glass, and the thermometer but little above the freezing point outside, yet no harm came to them. If the temperature is too high the pseudo-bulbs are apt to shrivel, and the growths are checked. This I have found to be the case during very hot weather in summer. I may say further that they do not require an elaborately built house. Mr. Wilson Saunders, who has had much experience with them, when commenting on those exhibited, stated that a house could be built to grow them in perfection for £10; so that even the humblest amateur may "go in" for the culture of what used to be considered as the aristocrats of the vegetable kingdom.

Lycaste Skinneri though not to be compared with the Odontoglossums in some respects, has merits of its own which place it in the front rank as a winter-flowering Orchid; its large, handsome, and persistent flowers are very useful for decorative purposes at the duller season of the year. In Lord Londesborough's collection was a variety with pure white flowers, much better in form, and the sepals and petals of greater substance than that usually grown under the name of *L. Skinneri alba*. Messrs. Veitch's collection contained many very fine varieties; indeed, it would be a difficult matter to find any two of them alike. This requires similar treatment to *Odontoglossum*, except that a higher temperature is desirable when the plants are making their growth. *Celoglyne cristata*, requiring similar treatment, is a most charming winter-flowering species, its pure white flowers are always welcome. Mr. B. S. Williams, of Holloway, had some immense well-flowered specimens. No lover of Orchids should be without this, as it is easy of culture, and flowers freely.—J. DOUGLAS.

DRAINING BOG.

I AM obliged to "J. T." for so promptly and kindly answering my inquiry on the subject of draining bog land. Where he writes from—Maesgwynne—sounds very like a land, not only of bog, but of rocks and stones. I ought to have mentioned that from the absence of stone where my land is, the cost of procuring it would render stone draining practically impossible. I have myself done some extent of stone draining in a Welsh county, and his plan No. 1. is a good one; there is also a

double advantage in such draining where stones abound—you are clearing the land by the process at the same time. With regard to burning bog, I can endorse all "J. T." says as to the value of the ashes as a manure; but I think his suggestion should be taken as chiefly valuable in the primary process of reclaiming heath and bog land. By burning, you at once reduce a great quantity of fibry substance into a valuable manure, which would otherwise be a good while in rotting. To continue the process of burning would be destroying the staple of the soil, as, after being drained, bog does not renew itself. "Pushing and burning" was commonly practised with the bog land here many years ago; but it was found to be "killing the goose," and has been long since prohibited and discontinued.—V.

A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 3.

BARKERIA SPECTABILIS.—Another fine species. It grows erect, and from the top of its stem-like pseudo-bulbs are produced long racemes of large bright lilac and pink flowers, which are in some varieties freckled with crimson dots. Its flowers are freely produced during the months of June and July, and last a long time, especially when cut for bouquet-making. Native of Guatemala.

B. ELEGANS.—This is also a native of Guatemala, and is at the same time one of the most beautiful and rarest of the whole genus. Like the others its growths are slender and stem-like, whilst the flowers are very large and richly coloured, the sepals and petals being dark rose, and the lip deep red shading into crimson. When I add that these beautiful spikes of bloom are produced during midwinter, enough will have been said to recommend it to all interested in this order. A representation of this beautiful species is given on a previous page.

ARPOPHYLLUM.

This may be truly called a neglected genus, as few amateurs either know it, or those who are acquainted with it seem to have given it the cold shoulder entirely, for no other reason that I can ascertain than the difficulties which most have experienced in producing a spike of bloom. Now, I cannot permit the few species of this genus which have, up to the present time, been introduced to this country to be utterly cast out of amateurs' collections without becoming their champion, and thus endeavouring to prevent their passing out of cultivation. Firstly, then, my readers, allow me to inform you that the *Arpophyllums* are very free bloomers, and that those who have hitherto found them otherwise have only themselves to blame, as many have had to do with respect to other genera, the fact being that if kept in a very low temperature they grow superbly and flower profusely. The individual blooms of the members of this genus are not large, but as they are very numerous, want of size is amply compensated for. In potting drain the pots well and thoroughly, and use only rough fibrous peat and sharp sand to pot them in. During the period of growth an ample supply of water will be necessary, and in winter it must not be entirely withheld.

A. GIGANTEUM.—This plant has slender stem-like pseudo-bulbs, each bearing a single, thick, fleshy, dark green leaf. The flower spike proceeds from the apex of the stem—that is, from the base of the leaf. The spike is erect, stout, and densely set with small dark purple flowers, the outline very much resembling a Fox's brush. If kept very cool in winter it will bloom about the middle of May; but if the spring months are warm it usually comes in about the beginning of April. Native of Guatemala.

A. CARDINALE.—A very beautiful kind from the same locality as the preceding, but it has now become very rare. In general habit it resembles *A. giganteum*, but the flowers are rich red shaded with rose; these come in after those of *A. giganteum* are past.—EXPERTO CREDE.

BLICKLING HALL,

THE SEAT OF THE MARQUIS OF LOTHIAN.

BLICKLING HALL is about two miles from Aylsham in the county of Norfolk. The manor was known by the name of Bliclinga when the Domesday Book was written, but we pass over all its subsequent owners until we come to Sir John Fastolf, who, about the year 1450, sold the manor and house to Sir Geoffrey Boleyn, Lord Mayor of London. Sir Geoffrey adopted it as his country residence. The estate descended to his great-grandson Sir Thomas Bulleyn, who was the father of

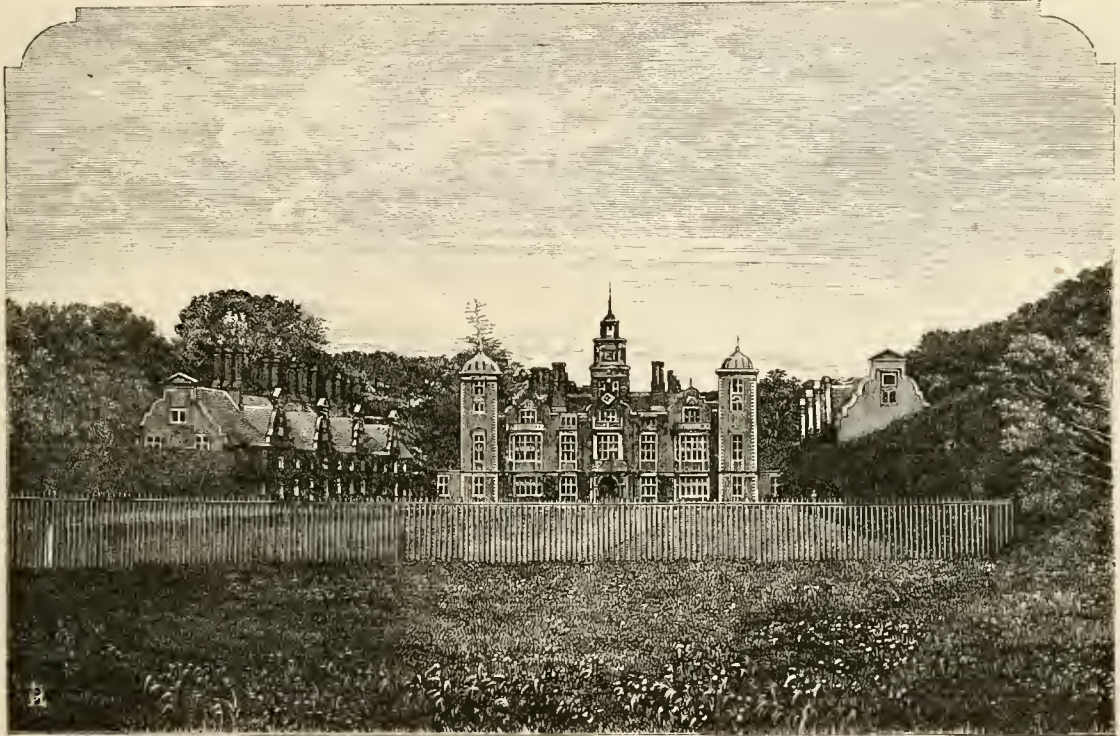
Anne, one of the sacrificed wives of Henry VIII. Sir Thomas usually resided, when in the country, at Rochford Hall in Essex, but he also resided occasionally at Blickling, and here Anne was born in 1507. It has been stated that here also she was married to Henry VIII. in 1533. It is certain that the marriage was private, but we know of no contemporary authority which states that the ceremony took place at Blickling.

From the Boleyns it passed by marriage to the family of the Cleres. One of them, Sir Edward Clere, to relieve himself from debts resulting from his extravagance, sold it about the year 1600 to Sir Henry Hobart, then Attorney-General, and afterwards Chief Justice of the Common Pleas. His son built the house now remaining. It was finished in 1628. More than a century later it was described, and the description is still nearly correct, as being of "two courts, with a fine library,

elegant wilderness, good lake, gardens, and park." In 1746 the Hobart then its possessor was created Earl of Buckinghamshire. His second daughter married to the eldest son of Lord Suffield, and who succeeded to that title. The offices in front corresponding to the rest of the mansion, together with the west front, were rebuilt in 1769 by the Earl of Buckinghamshire.

Blickling Hall was Lady Suffield's dower house. The present Marquis of Lothian was her nephew, and therefore succeeded her, as she had no children, Lord Suffield having it only in right of his wife.

The park and gardens include about one thousand acres. The park is divided and adorned by woods and plantations of noble forest trees. The lake, nearly a mile in length, is crescent-shaped, and 400 yards across in its widest part, and its banks are beautifully wooded. The garden is a mile in



BLICKLING HALL.

circumference. The gardens at the present time, especially the flower garden, are undergoing extensive alterations. The new wall and terrace steps just erected, enclosing two acres for flower garden, were designed by Sir Digby Wyatt. The plans for groundwork were furnished by Mr. Nesfield, and executed by that well-known contractor Mr. Meston. The present design of the flower garden is entirely Lady Lothian's, and carried-out by the present gardener, Mr. S. Lyon.

Our view of the house and garden in front—we wish we might include the old carved oaken staircase inside—is from a

photograph taken by Mr. Finch, Photographer, Aylsham. This front garden is bounded, as shown in our engraving, by those massive Yew hedges so common two centuries since, but now so rarely remaining. These Yew hedges measure 110 feet in length, are 17 feet in height, and 10 feet in breadth. They are known to be two hundred years old. The kitchen garden is four acres in extent, and since Mr. Lyon's appointment to the garden in 1870 have been thoroughly remodelled. One great feature is a fine old Oak standing in the orchard; stem 50 feet high.

WORK FOR THE WEEK.

KITCHEN GARDEN.

As soon as the weather is favourable give the *Artichokes* their spring dressing; *Basil* and *Marjoram* should now be sown in pans or pots, which may be placed in a forcing house. Earth-up the early-sown crops of Broad Beans; if any were sown in boxes, place them where they can have abundance of air night and day to harden them off for planting. The autumn plantation of *Cabbages* should now be filled-up, and fresh ones may also be made. Sow more seed to produce plants for summer and autumn use, also seed of the Red for pickling. If *Cauliflower* seed was sown early on a hotbed with Carrots or Radishes, the plants should now be pricked-out on a slight hotbed, or in a cold frame where they can be protected in severe weather. The present unkind and cold weather is highly unfavourable to the health of the *Cucumber* plants, as it will not allow of an ad-

mission of fresh air daily without fear of their receiving injury. After linings have been renewed, keep a constant watch on the state of the bed. *Lettuce*.—Fill-up any vacancies in the autumn plantation. Sow some seed of the Green Cos on a warm border. *Mushroom* beds out of doors must be protected from wet, damp litter should be removed and its place supplied with dry. Autumn-sown *Onions* may be planted-out in favourable situations. The general spring sowing may be made at the end of the month in light and dry soils. Harden-off the *Peas* sown in pots and boxes previous to planting them out, place them in a cold frame, and let the lights remain off night and day in mild weather. Earth-up the early crops when the soil is somewhat dry. Make another sowing of *Radishes* to succeed those sown at the beginning of the month. *Rhubarb* may be forwarded in the open ground by placing a hand-glass or Sea-

kale pot over the roots. Sow seed of *Savoy* for the first crop.

FRUIT GARDEN.

Take every favourable opportunity to finish pruning fruit trees; Currants, and the Grape Vine especially, if not cut in autumn must not be delayed.

FLOWER GARDEN.

The frost and snow which set in at the early part of last week have in a great measure suspended the operations of the gardener, and many of those directed must be understood to depend on a relaxation of the weather. New plantations of ornamental trees should be made, and old ones that have become too thick should now be freely thinned-out. Auriculas may be kept moderately moist. If not dressed as before directed, let this be done immediately. See to *Polyanthuses*; as spring advances, the snails become proportionably troublesome, diligence must be used in trapping them. Plant *Ranunculuses* without delay. Seed must be sown, though I prefer autumnal sowing where there is an opportunity of protecting during winter. Frames covered with calico prepared with Whitney's or some similar composition, will afford great facilities in the way of preservation in severe weather. The compost necessary is leaf mould and loam in equal parts, previously exposed to the action of heat to destroy insects, eggs, &c., contained therein. Boxes about 18 inches by 12, and 6 deep, are most convenient. Fill with compost, and water it well; sow the next day, cover with very fine soil lightly, for if too deep the seed will not appear. After sowing it must be protected from heavy rains and frosts—a cold frame is, perhaps, the best situation. Should any soil have lodged in the axils of the leaves of Carnations it should be removed; a quill with the feather stripped off on one side and cut halfway off on the other, makes a simple but effectual brush to perform this operation, and by timely looking through the stock disease may be prevented. Planting-time is now rapidly drawing on; exhibitors who have not strengthened their weak or deficient classes in the autumn should now look out for the sorts wanted, if they mean to get first prizes or silver cups. Pinka may yet be planted in beds. I should much like to see these highly-fragrant flowers more extensively cultivated, but the flowers do not usually lace so well as in the case of plants planted in September.

GREENHOUSE AND CONSERVATORY.

Many plants will soon be fit for repotting. When plants are removed to a higher temperature shake the old soil from them, examine their roots, and repot them in fresh soil into smaller pots. This is a good mode for preparing plants for the one-shift system, which may be adopted as soon as the roots begin to spread on the outside of the new soil. The one-shift system should never be adopted until you are satisfied that the roots are in a healthy state and beginning to grow. There is no time when a low night temperature is more necessary than during the next six weeks, as plants are now more readily excited than at any other period. Orange trees if now removed to an early vinery or stove, and kept in-doors all the summer, will come into flower next Christmas with very little forcing. Camellias that have not formed their flower-buds may now be introduced into heat in succession from this time. Some of them may be expected to flower about the middle of next September. Plants of *Fuchsia corymbosa* which were cut back last autumn to the ripened wood and preserved in an outhouse through the winter, will flower in May if they are removed to a vinery or forcing house. The night temperature of the conservatory should now be lower than through the winter, say about 45°, in order that the plants may be started away slowly at first. This should be attended to now by all who regard the proper cultivation of their plants. If you guard against frost in the greenhouse, there is no danger of this house getting too low in temperature, and air should be admitted every fine day in order to keep the plants from growing too rapidly at this season owing to a drier atmosphere being thus produced. The plants in the house will require constant attention with regard to watering. Shift and tie-out *Pelargoniums* as may be required, and allow plenty of space after this time, with all the light possible, and a free circulation of air whenever the weather will permit, but avoid cold north-easterly winds, which are very injurious to plants in active growth. Do not allow *Calceolarias* to suffer for want of pot room, as any check at the present season might throw them prematurely into bloom. *Echeverias* and other plants in pits and frames will now require frequent shifting and placing at greater distances from each other in order that air may be permitted to circulate freely among them. Damp and mildew are the great enemies to be guarded against here, and these must be sharply looked after, especially in the case of plants that have not ripened their growth and are in rather a soft state. If the former is troublesome it must be got rid of by means of free ventilation on mild days, using a little fire heat at the same time, and for the latter a dry airy atmosphere is the best preventive, but the plants should be frequently examined, applying sulphur on the first appearance of the enemy. Get all the plants tied with the least possible delay, for it is

difficult to tie a plant so that it will not look somewhat stiff and unnatural, and the sooner all this description of work is done the better the specimens will look when in bloom later in the season.

FORCING PIT.

This is a good time for propagating many plants by cuttings, grafting, and seeds, and the forcing pit is now the best place for this purpose. Seedlings already up ought to be potted-off as soon as they can be handled. Foreign seeds had better be sown in 6-inch pots, putting four or five kinds into one pot, and placing labels in the middle facing the different seeds. Less water will then be needed than if each kind were sown in a small pot.

COLD PITS AND FRAMES.

A calculation should now be made as to how far the inmates of cold pits and frames will supply the demands to be made upon them. No doubt damp has reduced the number of some kinds. Strong plants, or pots of stores which had become well established in the autumn, of *Verbenas*, *Fuchsias*, *Petunias*, *Heliotropes*, *Salvias*, *Calceolarias*, &c., should be removed forthwith to some of the houses or pits at work. These will quickly furnish abundance of early cuttings, which should be slipped off and propagated.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE weather, though finer, has been too variable to admit of much, except rough work, being done out of doors, as the snow is not quite gone on the 15th, and the ground where at all stiff can hardly be worked. Trenching, ridging, carting, and wheeling could be well done, as, though there was plenty of thaw and mud during the day, the mornings, with the exception of that of the 15th, were hard enough with frost to permit of such work being done. We have little faith in sowing in such a state of the soil. Where the soil is light and dry the work may be different.

Situated as we are, we must try to forward Peas and Beans under glass, and we have been getting ranges of slight hotbeds ready for frames and pits of Potatoes, Carrots, early Turnips, &c. For all such purposes a little bottom heat, about 70°, is a great advantage. When the soil is put on, the Potato sets and seeds will be in an average of 55°, and that will do very well. A much higher temperature will do more harm than good. We have seen whole ranges of pits of Potatoes, Peas, dwarf Broad Beans, and even Dwarf Kidney Beans, next to destroyed by too much heat. It is quite a mistake to imagine that a Pea or a Potato wanted early will stand anything like the heat of a Cucumber or a Kidney Bean. Many beginners act as if they thought heat would do anything, and it requires a little teaching, and above all the teaching of experience, to find out that too much heat is as dangerous in many cases as too low a temperature is in others. For all such helping beds we merely throw the fermenting material together, water, if too dry, and as soon as it heats kindly we use it for the main part of the shallow beds and place a surfacing of the old beds over it. It requires a little experience to be able to do all this to a nicety without a mishap. We can pretty well judge as exactly what beds of different heights will do, according to the material, just as in going through a range of houses at different temperatures we can, on opening the doors of the compartments, tell at once within a trifle the temperature in each without looking at a thermometer.

In a large place it is a good plan to have one standard thermometer proved to be correct, and compare it with the other thermometers on the place. We have found many very cheap thermometers very correct, and some high-priced ones the reverse, though, on the whole, a thermometer moderately priced, say 4s. 6d. to 6s. may in general be more depended on than one at 1s. 6d. to 2s. The latter, however, are often good enough for common purposes.

As the weather became milder, and we had also, especially on the 15th, some fine gleams of sunshine, in the middle of the week the coverings were removed from Celery beds and Broccoli, so that the plants might be kept hardy. Snow's and Walcheren Broccoli came in very useful after Veitch's Late Broccoli was over. Potatoes, planted early in winter on a bank sloping to the south, are growing and rooting well. The frost was not severe enough to reach them, and if it had threatened to do so, we should have strewn some litter over the ground. Sea-kale, Rhubarb, and Asparagus we have lately said enough about, but they help greatly at this season. Took out one of our Mushroom beds, and have materials for another. During the winter our shelf beds generally do better, at least come in more quickly, than those beds made on the floor, as they are more thoroughly under command of what heat and moist vapour we may choose to give. With beds in open sheds and in the open air success in winter will chiefly depend on two things—a greater bulk of materials, and a more careful covering to secure a uniform temperature.

FRUIT DEPARTMENT.

The weather has kept us back in pruning, tying, nailing, &c., and the frost has helped to prevent the trees getting too forward. We notice that the birds have been making more free than is desirable with Apricot buds. Trees in orchard houses must be pruned, and glass and woodwork cleaned forthwith. We moved Strawberries from pits and frames into Peach houses, and from other pits into a hot-water pit. From circumstances we shall be much later than usual. A good many of our Strawberry plants in pots have been injured by rats and mice feeding on the buds. Singularly enough we lose few by this means when the plants are in the open ground, but let the plants be fine ones in pots, and they are almost sure to be attacked; and the finest plants, as a rule, are pitched upon for this destructive attack.

We gave plenty of air in the mild days to Peach trees in bloom. In dull days we gave a slight rise from fire heat to permit of this to be done. In sunny days less fire was necessary. In a sunny day, with a nipping fierce north wind, we gave comparatively little air, but lessened the fire heat. A little air early given, and a little artificial heat, in a sunny frosty day, would be better than allowing a cold frosty air to play at once on blooms that had been considerably weakened by the previous protection and very dull weather.

ORNAMENTAL DEPARTMENT.

See what has been lately said of lawns, turf-laying; protection to Auriculas and half-hardy plants; planting Ranunculuses, Anemones, &c., when the ground is drier; protecting forward bulbs in the open air; and attending to Hyacinths, Tulips, &c., in houses, giving them some manure water slightly heated, as the flowerstalks and heads show, which adds much to their strength. If given earlier it may also impart strength, but at a sacrifice of colour. In hardly any case will manure water be useful to flowering plants in pots until the pot be crammed with roots and the flowerbuds begin to appear. Of course, there are cases where strength of growth is necessary to the formation of flowerbuds, but these must come in as exceptions to the rule. As a general rule Lilacs, Roses, Deutzias, Spartiums, Wall-flowers, Stocks, Rhododendrons, Azaleas, &c., when forced derive the most benefit from manure watering when the flowerbuds appear or just commence to swell. The whole of the Pelargonium group are bettered by manure watering after they are knotted for blooming, and when the pots are well supplied with roots. Given at an earlier period, it would so much encourage grossness of foliage that the flowers in comparison would look meagre.—R. F.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*Camjee*).—The "Cottage Gardeners' Dictionary" and Johnson's "Science and Practice of Gardening." Both can be had from our office. (*Mac*).—Miss Plue's "Rambles in Search of Flowerless Plants" is a separate work. (*A Subscriber for Years*).—The "Cottage Gardeners' Dictionary" includes all garden plants and their culture, &c. (*H. T.*).—The "Cottage Gardeners' Dictionary" is a good work of reference, and would give you the useful information on all garden subjects. Our "In-door Gardening" would suit you in respect of the greenhouse. The former may be had free by post from our office for 7s. 2d., and the last named for 1s. 7d. (*A Beginner*).—Our "Keane's Out-door Gardening" would suit you. Free by post from our office if you enclose twenty postage stamps with your address.

ORCHIDEN SOIL (*E. F. W.*).—There are full particulars in our number published on January 23rd.

GRAPE CROP (*F. R. F.*).—No one, even if you had mentioned the variety, could have told what would be the probable produce of Vines during three years. Too much depends upon soil, vigour, and season.

PRESERVING GRAPES (*G. R.*).—There are a drawing and description of the mode by putting the end of the spray into a bottle of water on page 212 of our 571st number, published on the 7th of March, 1872.

PANSFANGER (*Ignoramus*).—It is near Hertford; railway station, Cole Green.

NUNEHAM PARK ONION (*A Subscriber*).—It was brought to public notice by Mr. Stewart, when gardener at Nuneham Park. It is only a good strain of the White Spanish.

RIAMNUS FRANGULA (*J. P. York*).—Write to "RIAMNUS," office of this Journal. Mr. James Smith, Darley Dale Nurseries, Matlock, can also supply it.

DANDELION (*C. E.*).—There is a long communication on its use as a salad, &c., in our No. 3, N.S., published April 16th, 1861.

GILLFLOWER (*A Lady in Cheshire*).—Your friend is quite in error; the name is certainly not a corruption of "July flower," but of the French name, "Giroflée." Your mother is accurate in her description, showing that the Carnation in Scotland seventy years ago and more was known as the Gillflower.

MUSHROOMS IN GREENHOUSE (*Mrs. Bains*).—Two 4-inch pipes will be sufficient for the greenhouse if not very wide. If the house is at all wide it will be better to take them round the end as well as front. Mushrooms will grow well under the stages if the heating pipes are not too near them, and if the water from the stages does not drop on the beds. Saucers for the plants would so far remedy this; but perhaps the best plan would be to have a water-proof cover, or tarpaulin, not laid on the bed, but 3 or 4 inches above it.

PLANTING ROSERY (*N. W.*).—We are sorry that, owing to press of questions, we were not able to answer yours sooner, and even now cannot give you

much assistance. The list of Roses is good, and with the exception of Mrs. Rivers, which we fear is too weak and uncertain a grower to depend upon, they may all be planted for beds. The design of the beds, however, is so very irregular, although somewhat uniform in its irregularity, that it will be difficult to plant so as to produce any definite effect either by contrast or harmony of colouring. We should recommend you to try cross-balancing—for instance, to use Charles Lefebvre and Fisher Holmes for match beds; Louise Van Houtte with Duke of Wellington, Prince Camille de Rohan with Pierre Notting, and so on. We are led to make these remarks, as in some cases the beds adjoining each other are very similar in colouring, in others in great contrast, and we hardly know which plan you intend to adopt. If we once began to alter the position of the Roses, we should have to alter so many, that we prefer to leave it to your own judgment.

EFFICIENT HEAT FROM HOT WATER (*J. R.*).—As your piping is sunk under a grating, we thoroughly approve of having 100 feet or so more piping; and in the position indicated, and for the purposes mentioned, with your piping exposed, you would have had enough with 1 foot of piping to 21 cubic feet of air. From our own practice we should say that pipes so sunk under a grating make their heating power under a grating fully one-fourth less than would be at once available if they were fully exposed to the atmosphere of the house.

ZIGZAG GAS BOILER (*Conservatory*).—We sent your queries to the manufacturer, and in reply he says:—"First, the supply of gas will not be quite equal, but the flame will not go out with a reduced pressure. Secondly, Bunsen's air and gas burners give the greatest amount of heat, and without smoke. Thirdly, the boiler can be fixed inside or outside. The flue pipe is made large enough to carry off any effluvia or unconsumed gas. Fourthly, the ascent of heat is not perpendicular, but under and over a series of flat surfaces containing thin layers of water. Fifthly, there is no accumulation of soot, as Bunsen's air and gas burners are used, and a blue flame is emitted."

HEATING FROM KITCHEN BOILER (*Clara*).—We prefer 1-inch instead of three-quarter-inch for a conveying pipe from the kitchen boiler; as part in the greenhouse has 2-inch pipes, the return should not be less. The greenhouse must be small if you can heat it with two pipes, even if both were of the diameter of 2 inches. The supply-cistern is placed right enough, and, as stated lately, it is a matter of comparative indifference where it is placed, provided it is higher than the highest point of the pipes, and there is a small air-pipe at the highest point of the pipe, such as where you show the return elbow. With a ball-tap the boiler will be kept full, whatever you take out of it for house use. The steam-pipe is valuable in all close-topped boilers; but we would have a tap on it, to be open when no heat is wanted in the greenhouse, and to be shut when you want a brisk circulation in the greenhouse pipes—at least very nearly shut. The pipes will carry off the extra heat without wasting heat by the escape of steam. You should have a tap on the valve on the flow-pipe into the greenhouse, as heat from the boiler there would be unwelcome in summer.

CUTTINGS AND SEED-SOWING IN GREENHOUSE (*A Lover of Flowers*).—In your small greenhouse, in which you use fire heat only when there is frost, you want some simple contrivance for obtaining a little bottom heat. The simplest we know is a stout wooden box, say wood 1 inch thick and 34 inches long, 17 inches wide, 13 inches deep at the front and 18 inches deep at the back, all inside measure. If this wood is well seasoned, and the whole neatly put together and grooved where ends, sides, and bottom meet, it will hold water if a little white lead be run in the joints. Even without that, it will do so if the box be soaked in water for a short time. All that would be required then would be a plate of zinc or tin placed with a few supports between the bottom and it, and 3 inches from the bottom, with a plug or tap at one end and a funnel-pipe at the other, so as to supply the vessel beneath the plate with hot water from 2 to 2½ inches deep. A few small pebbles or clean rough ashes should be placed on the iron, and then you can plunge the pots in what is most handy. Such a box will hold eighteen of what are called 48-pots, and thirty-two of what are called 16-pots. The water will generally be hot enough if supplied once a day, and an equal temperature can easily be afforded by removing only a part and adding a part of hot. Such a box should stand in the greenhouse or window. A rough box would do if you had a tin vessel 3 inches deep and covered. With a box having a bottom of iron you could heat with lamp or candle, but the box of hot water is the simplest. The top should consist of three squares of glass movable, resting on the back and front, and if each square is in a neat frame all the better; but they may be easily laid on and moved without any frame, and a tack in front will prevent them sliding. When thus moveable the squares can easily be turned top side under.

TRENCHED GROUND NOT FERTILE (*H. T.*).—In trenching your garden ground, we apprehend you have gone too deeply and brought too much of the gravelly subsoil to the surface. This will, from exposure to the atmosphere, become ameliorated, and the present apparent evil will ultimately result in a positive good by giving you a greater depth of soil. We should apply the manure you propose, and not be sparing of it; and this we should give at once, pointing it in with a fork, and at the end of March we would use salt at the rate of ten bushels per acre. This will rid you to a great extent of slugs, and then, before sowing or planting, dress with nitrate of soda at the rate of 1 lb. to 30 square yards. By all means apply guano and soot as a liquid manure during the period of growth, and we think you will be rewarded by superior crops.

ALOE WINTERING IN A CELLAR (*Sussex*).—We think your cellar would answer at the duldest period of the year, say December, January, and February, if the plants were kept dry and safe from frost. In October, November, March, April, and part of May you could probably accommodate the plants in an outhouse where they would have light, which you need only afford in mild days; and at night a covering of canvas, in addition to closing the doors, would give you all the protection you require.

POTING GERANIUM CUTTINGS (*F. L.*).—The cuttings may be potted-off from the boxes now, and placed in the propagating frame heated by hot water, where they should remain not less than a fortnight—better three weeks, during the last week of which they should have air freely admitted, so as to harden them well off before removal to the cold frame. In the latter they will need protection at night, or during frosty weather, by mats or other covering placed over the lights.

SETTING PEACH TREE BLÓSSOMS (*H. C. J.*).—When the pollen is perfected shake the branches of the trees on the back wall of your vinery.

RHODODENDRONS (*J. Taylor*).—The varieties are such a multitude that no one can name any but those markedly distinct. We lately noticed fully the wioter blooming.

ZIGZAG BOILER—ARNOTT'S STOVE (*A. A.*).—We are equally surprised with yourself at manufacturers not fully advertising their inventions. More particu-

lars are wanted by our correspondent as to the price, and heating power of the Zigzag boiler. The Amott stove to which you allude is a portable one, which you will find figured at page 23, vol. xiv., of THE JOURNAL OF HORTICULTURE. It could no doubt be had through any of our principal ironmongers in large towns.

SPOTS ON ROSE LEAVES (M. F. W.).—The leaves sent are not infested with any disease; they are only spotted from being in a cold and damp atmosphere. The leaves you sent are of last year, and had not been shed, probably owing to the soil having been kept drier. The fresh leaves will come all right. We do not recommend one seller or purchaser of plants in preference to another, and we cannot depart from our rule in respect to cut flowers.

DAHLIA TREATMENT (Chce).—They should be placed in a box or in pans, covered to the neck with light rich soil which is just moist, and set in a gentle hotbed in March. When they have shoots about 3 inches long divide the roots from the crown downwards, preserving a portion of old tuber to each division; or the shoots may be taken off close to whence they proceed, when 3 or 4 inches long, and potted in light rich soil singly in 3-inch pots, inserting them half way in the soil, resting the base of the cutting on silver sand. Surround them with the same and place them in a gentle hotbed, plunging the pots to the rim in coal ashes or other material. Water carefully, keep close, and shade from bright sun. In a fortnight or three weeks they will be well rooted, and should then be hardened off, potting, however, in 4½-inch pots, when the roots are matted round the sides of the smaller-sized pots, and when the roots again show at the sides remove the plants to a cold frame, setting them on coal ashes. Keep them rather close for a few days, then admit air daily, water well, and keep them safe from frost. They may be planted out at the end of May. The situation should be open, but sheltered from winds, as the shoots are brittle. The shoots should be thinned, also the flowers on each plant, preserving the best and strongest. Keep the plants well staked. The Dahlia likes a rich, deep, friable loam, enriched with well decomposed dung. You will find particulars of the treatment of this and other florists' flowers in our "Florists' Flowers," which can be had from our office for five postage stamps.

POTTED VINES NOT BREAKING (Ibid).—The cause of the Vines not breaking, or breaking so very irregularly is probably due to the canes not having been depressed, and they have not perhaps been moistened two or three times a day with water of the temperature of the house. Had you brought the ends of the canes down to a level with the pot, arching them over, it is likely they would, with moisture, have broken every eye from the base to the top of the canes, and when all the eyes had broken the canes could have been tied up to the rafters; or had they been coiled around stakes we think they would have broken more regularly. We should even yet depress the canes, bringing their ends level with the soil or even below the pots, arching the canes over so as not to break them, and in this way we think you may even yet ensure the breaking of every eye, unless they are rubbed off or have been otherwise damaged. We think you have pruned them too short to ensure a crop, as the eyes at the bottom of pot Vines are not nearly so well ripened as those on the upper part of the canes. We should have left them 7 feet, or even 8 or 9 feet long had the wood been strong and hard, and the eyes prominent.

FERN, &c., FOR HANGING BASKET IN CONSERVATORY (Amateur).—*Ferns*: Adiantum Capillus-Veneris, A. setulosum, Davallia dissecta, Nephrolepis tuberosa, Nipholobus ligula corymbifera, and Platycodon alicornis. *Flowering plants*: Convolvulus mauritanicus, Ivy-leaved Geraniums, with pink, scarlet, mauve, and white flowers, also with variegated leaves, Heliotropium of sorts, Lophospermum Hendersoni, Lithospermum prostratum, Campanula gargarica, Lysichiton cymbaria, Lysimachia nummularia, Tropaeolum Lobbianum var. Brilliant, and Triumpha de Gaud, Neriumbergia gracilis, Saxifraga sarmentosa. The whole are cheap, and may be had of any nurseryman advertising in our columns. We cannot recommend dealers.

PREVENTING RABBITS BARKING FRUIT TREES (Idem).—The best preventive we know is to wrap the stems to a height of 3 or 4 feet with a hay band. The hands must be renewed every alternate year, but should be gone over annually to see that the stems are covered. Strips of card paper dipped in gas tar placed in slits in sticks thrust in the soil so as to be about 6 inches above ground, and disposed around the trees, will keep rabbits off the stems so long as the tar is fresh. If, however, the trees are dwarfs the only effectual remedy is to wire the enclosure round with 2 feet 6 inch netting, and the lower edge embedded 1 or 2 inches in the ground. We do not know of a double White Geranium.

SOIL FOR RHODODENDRON AND HARDY AZALEAS (H. F. F.).—As your soil is light and rich, it will grow Cedrus Deodara well if the situation is sheltered from winds. For the Rhododendrons we should advise you to add to it some cocoa-nut fibre refuse as you propose, and some good turf chopped up rather small; and you may further add leaf soil or old cow dung, all of which are good for Rhododendrons; and in such materials they grow better with us than in peat.

HYBRIDISING GERANIUMS (M. W.).—There is but one way of effecting the hybridisation of plants, and that is to apply the pollen of one species to the stigma of another. Most of the present race of Geraniums are not hybrids, but cross-breeds. You will need to remove the stamens of the flower you wish to operate on before the pollen is ripe, and enclose the flowers in a gauze bag both before and after the pollen of the other has been applied to one or all of the born-like stigmas. When the seed vessels enlarge you may remove the bag. The best time to apply the pollen is in the early part of the day, and the plants seed more freely when they are kept rather dry, so as not to be gross, a dry well-ventilated atmosphere being necessary.

GLADIOLI IN POTS (Idem).—Place three in a 6-inch pot filled with a compost of two parts light turfy loam, one part old cow dung or leaf soil, and one part sandy peat, the whole well broken up and mixed, adding a sixth of silver sand. Place the bulbs on silver sand, and surround them with the same material. Cover them about an inch deep with soil. If the soil be moist no water should be given. Plunge the pots in ashes in a cold frame or pit, watering sparingly until they begin to grow, then water more freely; admit air abundantly, and protect from frost. When they are growing freely water abundantly—not over watering, and when they are advancing for flowering water twice weekly with liquid manure. The flowering pots should be 8 inches in diameter; shift into them when the roots are slightly matted round the sides. Afford plenty of head room, place the plants near the glass, and syringe twice a day to keep down red spider.

BEST VARIETIES OF FRUIT TREES (Sam. Bowers).—It is not easy to enumerate the best sorts of fruit trees for a given locality. We have found a variety succeed well in one garden, but not in a neighbouring one. Winter Nels Pear does not succeed with us, and a friend a few miles distant thinks it quite first-class. Your soil being light and near the gravel is naturally not

a good one for fruit trees. The best Apples for you are—Adams's Pearmain, Court-Pendu-Plat, Cox's Orange Pippin, Early Harvest, Golden Pippin, Early Margaret, Kerry Pippin, King of the Pippins, Old Nonpareil, Pitmaston Nonpareil, Scarlet Nonpareil, Mannington's Pearmain, Reinette du Canada, Golden Reinette, Reinette Jaune Hstive, Ribston Pippin, Syke House Russet, and Sturmer Pippin. The following are kitchen Apples—Bed ordshire Founndling, Bleheim Pippin, Cox's Pomona, Dumelow's Seedling, Emperor Alexander, Galloway Pippin, Gloria Mundi, Gooseberry Apple, Hawthornden, Kentish Codlin, Lord Suffield, Mère de Ménége, Norfolk Beefing, Tower of Glannis, and Warner's King. *Pears*—Beurré Bosc, Beurré d'Arenberg, Beurré d'Amansis, Beurré Giffard, Beurré Superfin, Conseiller de la Cour, Doyenne d'Été, Fondante d'Automne, Jargonelle, Louise Bonne de Jersey, Marie Louise, Madame Treve, Summer Beurré d'Arenberg, Williams's Bon Chrétien, and Zéphirin Grogre. *Plums*—Angelina Burdett, Goe's Golden Drop, Golden Esperen, Green Gage, Guthrie's Late Gage, Jefferson's, Kirke's, Purple Gage, Reine Claude de Bavay, and Transparent Gage. *Kitchen Plums*—Diamond, Early Prolific, Mitchellson's, Orleans, Pond's Seedling, Prince of Wales, Prince Englebert, Victoria, and Washington. *Cherries*—Bigarreau, Bigarreau Napoleon, Black Eagle, Black Tartarian, Elton, Florence, Governor Wood, Kentish, Knight's Early Black, May Duke, Morello, and Royal Duke.

SLUGS (J. S. H.).—You had better sprinkle quicklime of an evening between the crops. The slugs are then on the surface. If the soil is heavy it would be improved, and the slugs extirpated, by paring and burning 6 inches deep of the whole surface. Brown's "The Forester," is the best book on managing woods and plantations. There is no small-priced work on the subject that is practical and trustworthy.

MASS OF MUSHROOMS (J. L. F.).—A group of Mushrooms, more than fifty in number, and weighing 17 ozs., grown on a hotbed is large, but not a phenomenon.

ALTERING LEAN-TO GREENHOUSE (J. A.).—As your house of 40 feet must not be a fixture, we would obtain leave from the landlord to fix a 1½ inch board by 7 inches to the back wall to receive the ends of the rafters. We would have the whole wood and glass. The front sill we would lay on short stout sleepers laid on the ground, and have upright studs between that and the wall plate to receive wood and glass in front, part to be a wooden ventilator. All these we would fix with screws, so as to be easily moved. You do not say the width, but the best plan will be to have your rafter snub-bars about 16 inches apart, and groove them to receive glass of that width. These could be packed firmly with strips of soft cord, &c., beneath, and thus the glass could be easily taken out and repacked. You could not heat with a flue without leaving it behind you, unless there was a regular agreement to the contrary. On the same principle, if you used hot water, the best plan would be to have a small portable boiler complete in itself, requiring no fixing, and in that case boiler and pipes could be moved. In your case, with the two divisions, the simplest plan would be to have a small iron stove in each house, and take a 4-inch pipe through the roof, using a square of sheet iron with a hole in it instead of a square of glass.

HEATING AN ORCHARD HOUSE AND VINERY (Amateur).—It is so far im, portant that the orchard house is lower than the vinery, as the flue entering the orchard house first will give off its greatest heat there; but that will enable you to make it the earliest house. Then, if there is no special drawback, the flue in the vinery would act better if it were near the front of the house instead of near the back wall. First, with the furnace sunk as stated you could heat both houses with one flue. Second, your mode of sinking the flue in the orchard house near the front and chambering it over will do, but then, besides an opening at each end of the orchard house, it would be advisable to have a grating opening in the middle; in fact, a good covering for the flue might enable you to dispense with chambering altogether. If not inconvenient, why not have the flue under the pathway, the top of the flue forming part of the pathway? Third, for the orchard house, we would recommend a brick flue, and as there is only one, we would have it at least 8 or 9 inches wide, and 8 inches deep inside measure. Fourth, you can heat the orchard house separately by having a small chimney at the point where it rises to go into the vinery. Fifth, to heat both houses when desirable, and the orchard house separately when desirable, with the stovehole at the same place, the first flue should terminate in a brick box, with a damper to prevent the heat going farther, and sending the smoke into the chimney. When the heat is wanted to go on, shut-up with a damper the hole in this chimney and take out the other, so that the heat shall pass into the flue of the vinery. If you could place your stovehole at that point you could heat either house at will. Now you must heat the orchard house before you heat the vinery. Sixth, approving of bricks for the orchard house, in order to interfere as little as possible with the Vine roots in the vinery, we would use 8 or 9-inch hard-burned pipes there; Portland cement pipes would answer admirably. The brick box at the end of the flue in the orchard house should be raised high enough, and be covered with a wide tile or stone to receive these cylindrical pipes, and if they rise a little all the way to the chimney they will answer all the better. At all corners it is well to have a brick box for cleaning, and then neither the flue nor the pipes need be disturbed. Seventh, the simplest plan would be to take the flue on without the intermediate chimney. The size of the furnace should be about 30 inches long, 14 inches wide, and 16 to 18 inches high. Eighth, when you ripen Peaches, Grapes, &c., we are not sanguine of ripening a second crop in pots, unless you apply the heat early, and then if you did, so as to have early fruit, you would need a much larger flue. A great many plants, and even salads and vegetables, may be kept in winter after the leaves have fallen.

TREATMENT OF HORIZONTAL-TRAINED PEAR TREES (Frank Corbett).—Certainly, allow the upper branches to grow out as far as the under ones in order to fill up all the wall surface.

VINES FAILING (B. C.).—From the specimens enclosed we believe one of two things to be the cause, either that the wood was imperfectly ripened last year, or that it is from defective root action since the Vines were started. The temperature was right, and if you gave the pots enough water, we do not know what more you could have done. When starting pot Vines we prefer a rather higher temperature for the roots, either by placing them near the hot-water pipes or plunging them in a bottom heat of about 85°.

PLANTING BACK WALL OF VINERY (J. W. S.).—Pot Vines trained to the wall would be as good as anything. We have seen Figs do tolerably well planted out on the back wall of a vinery.

CATERPILLARS ON ELBERT TREES (A Subscriber).—Your case is a very common one amongst Elbert-growers, and those who grow them on a large scale have the same enemy to contend against. Many of them adopt hand-picking by women and children; or when the caterpillars are very numerous, cloths are spread underneath the trees in as quiet a way as possible, so as not

to disturb it, when it is sharply shaken, and a number of the maggots will fall off at once. These, of course, can be easily collected into a pail or other vessel and destroyed: but there will always be some left, so that hand-picking is necessary as well. We have heard of several hushels of caterpillars being secured, and if this plan is found to pay the grower for market, who has rent and all other expenses to meet, it ought to be worth while to the private grower.

NAMES OF PLANTS (W. M.).—*Daphne indica*, a greenhouse evergreen. (G. F.).—We cannot name either plants from leaves, or florists' varieties.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE POULTRY OF 1872.—No. 3.

I CAN say little about the Game classes, except that they have well held their own; more they could hardly do, considering the perfection to which years of close competition have brought all the main colours of this noble breed. I have already remarked that the Brahmas have beaten every breed of late in point of mere numbers; but it must still be said that in no variety are there such a number of skilled and careful breeders as in Game, and in no classes at any good show can such a number of almost faultless birds be found giving rise to endless disputes over the correctness of the judging. After all that has been said regarding the change in style, or the difference between the old fighting and the modern exhibition birds, the breeders, the public, and the judges have given an unmistakable preference to the high-bred, graceful, fine-boned modern style; and the real question seems to me to be, Do any of us really want to bring back again the old cock-fighting days? If we do not, if our Game fowls are now to be preserved as exhibition and not as actually fighting birds, it is utterly impossible but that some amount of change should slowly and almost imperceptibly take place, for the simple reason that the handsomest bird will naturally be preferred. I have seen both kinds, and for myself I prefer the modern bird; those who wish to revive cocking may think otherwise. On the whole I should be disposed to say that Black Reds and Duckwings have shown the best during the past season. Why no Silver Duckwings are ever shown is a mystery to me, having only lately learnt that there are birds of this beautiful variety still in existence; surely they would secure their fair share of honours in the cock classes at least, even if the dull colour of the really true-bred hen disabled them in the pairs.

Amongst the Hamburgs I think I have seen better Silver-pencils than for some time, several hens having been exhibited with a rich lustrous black marking that left little to desire. The other marked varieties have been much as usual, but Blacks have to my fancy shown rather more of the Spanish than formerly in contour. The faces have been free from the taint, but the light and graceful outline of the true-bred Hamburg has been wanting in many prize birds.

In Polish fowls, both Gold and Silver-spangles have advanced in richness and accuracy of marking, and on the whole I think in popularity. But the poor White-crested Blacks seem dying out; scarcely any have been shown, in fact, only one or two really good pens have appeared. Delicate as they are, the loss of this breed would be regretted by all. Chamois have almost disappeared, but about them perhaps few would care much. Moreover, they can always be "made to order" if wanted.

Two, at least, of the French breeds are becoming more and more kept. Houdans retain their place, and increase in size and weight. I may note here a curious fact. When first imported the fifth toe was very uncertain, and many people thought it would be well to "breed it out." I myself hazarded the prediction that if this toe were finally "fixed" in the breed we should have humpfoot, having long made up my mind that the affection in Dorkings was owing to this cause, and could not possibly be accounted for by the accidental ones usually alleged. Having had the curiosity to watch the result, I hear on almost all hands that humpfoot is now appearing in the Houdan race, though unknown at the first, when the abnormal toe was less general, and hence we see the connection between the weakness of function and the excess of growth, a connection so frequent as to be well known to physiologists. Crève-Cœurs have gained ground immensely, have improved in freedom from foul feathers, and according to information kindly furnished me by various breeders, also in hardness: in fact, they seem at last to be becoming acclimatised, which at one time appeared very doubtful indeed. La Flèche appears a hopeless case.

Glancing briefly at less popular breeds, Malays seem to me to have established a marked advance. More of them have been shown, and at least one hen has appeared on the scene which honestly deserves to be called large. We may see the old Malay again yet! and if we do it will be much more popular than the little weedy things which have lately passed by that name. Sultana and Silkies have both shown a tendency to come into fashion. The White American Leghorn has firmly established its footing, and deserves it, as one of the best if not the very best of layers known. It lays as well as the Hamburg, but a much

larger egg, and is hardier and more adapted to moderate confinement. I notice a tendency to breed it with pale and short legs; this should be guarded against, spoiling the beauty of the fowl completely. Plymouth Rocks have also made their appearance on one or two occasions, and seem rather likely to be popular—I hardly know why, being inferior in my opinion to the Dominique, which is in less favour; indeed, in what the Rocks differ from tall, smooth-legged Cuckoo Cochinas it would be hard to say. They are, however, hardy and "generally useful" birds, and if they obtain a recognised place no one will grudge it them.

Game Bantams still advance, being more like Game, and less like other Bantams in shape every year, indeed, a bird not genuine Game in character would now stand a hopeless chance. I think the young birds, in fact, can hardly perhaps be bred better; but even the best in most cases get "stumpy" the second season and lose the gamey look which is so fascinating. In this direction there is still much to be done, and it is being done; for more old birds were shown with the required points than I can ever remember. I once thought it hopeless, but I now yet expect to see them so improved that the old birds shall keep their shape and carriage like the real Game, of which they are the miniatures.

In other Bantams we have had a new Dark Japanese variety, said to be very hardy and a good breeder. Cochinas seem dying out, which is a pity, as the queer little creatures were always popular. Why don't the few who have them cross into something else and back again, and so restore the prolificacy and vigour of the strain? Blacks have made giant strides. I have seen almost thirty entries in a class, and winning has become difficult indeed. Whites have increased too, and often claim a class to themselves; but the Rev. F. Tearle still, like a veritable Comte de Chambord, holds his "white flag" aloft with proud defiance. But I sigh for a breed I used to love, and keep in days gone by, though never then an exhibitor—the exquisite White-booted Bantam. I saw it once and only once last year. Let every man have his fancy, the world is wide. But to my eye the White-booted Bantam, with his quaint little ways, is the nicest little pet of the lot. He will stand and cock his head at you like a Canary, and he is almost the only bird you can trust in a garden. As to the Sebrights, the Golds have been getting so large, that while the lacing is all that could be, if care be not taken they will soon not be Bantams at all. Silvers, real Silvers, it has often been said have disappeared. This season the average colour has been worse than ever, and on one occasion I saw two pens side by side, one called Silver, the other Gold with not a shade between them. It may have been a mistake, but it was at worst not a very exaggerated statement of the case. On the other hand, some half dozen times there have been shown pens of Silvers really startling in their clear white ground, and also with more blue in the earlobe than I can remember seeing for long. Let us only hope they may increase and multiply.

I know little, or it may be better to say nothing, about Water-fowl and Turkeys, at least while alive, it would therefore be presumption to make any remarks. If anybody sends me one dead I will discuss it in my best manner. What I have said on other matters also is no doubt open to criticism, especially as it is founded almost entirely upon the classes at the few great shows, but I have given my honest opinion as to our progress or otherwise in poultry matters, as exemplified by the show season of 1872.—L. WRIGHT.

OUR ANNUAL EXHIBITION OF POULTRY.

THIS is an event not to be smiled at nor even lightly regarded. I can assure you it is an affair of great importance, and is conducted in a manner that reflects the highest credit on everybody.

From the time of its commencement in the morning till the last crow of the last departing "chanticleer" dies away in the distance at evening, we have an unsettled feeling that something other than the usual market and occasional brass band is going on. Covered carts and mysterious hamper excite our curiosity—groups of carriers (a class easily distinguishable) converse or "hold forth," on the respective merits of themselves, their horses, and the return journey. Early in the morning you would be certain to meet clean little boys with curiously constructed boxes that would hold, say, a rabbit, side by side with tidy little girls, with blue nooses and white pinafores, carrying what might be a cage, but all wearing such a "first-prize" air of expectation that it would be nothing short of refined cruelty to suggest even the possibility of "only a second." Then about noon our omnibus begins to be very busy. We have no cabs in our little town. Cabs, especially handsome, savour of gaiety, rapid transit, &c.; either of these are abominations. Still we are unmistakably improving, for hitherto 10s. has been the highest award at our poultry show; this year, however, 20s. was the prize offered for the best pen of Brahmas—a compliment they acknowledged by mustering some excellent specimens; and your "special correspondent" more than ever bewailed the mournful fact that the handsomest bird she possessed should go

and moult his tail three parts white. *Ne cede malis*, Never yield to misfortune—translation for those who have forgotten their Latin. Brave motto! but when the eldest daughter of the fickle goddess not only visits you often, but comes to stop, one is apt to undervalue her polite attention.

I was highly amused the other day; a man came to inspect my pets with a view to purchase some birds that would make up some defects in his own run. In reply to my question of what description the defects were, he said, "Well, ma'am, my Brahmas are very small, they are very bad off for feather, and they are not at all a good shape." Size, shape, and feather being defective I gave up the case in despair, referring him to our Journal. But I thought of the old-fashioned tale of the Irishman, whose gun only required a new "lock, stock, and barrel."

Yes, our Show was a success, but I should like to make one or two suggestions. I think, and others are also of the same opinion, if they made the pens a few inches higher in the Cochins and Brahma classes, the birds would have been able to stand up their full height, and perhaps have prevented the continuous "stirring-up" process with sticks and umbrellas. When will committees of poultry shows give the humane order that sticks should be left at the doors? I noticed that a man who seemed to be selling some splendid Cochins, made them rise instantly by simply blowing in their faces, and he went from pen to pen doing this in each case successfully. Fowls evidently object to be "blowed."

On leaving the Show I was told (in confidence) that probably next year we might have another. If so I will let you know.—J. K. L.

POULTRY-SHOW JUDGES.

I CORNLIALLY agree with the remarks of "OBSERVER," as well as those of the Rev. T. E. Cato, that a standard for the guidance of breeders is necessary in other classes as well as the Silver-Grey Dorkings is generally admitted, and that unless some means be adopted to establish a code of rules such as will enable breeders to know what they have to breed for, poultry shows will soon become extinct. Already several known breeders have intimated their intention of not exhibiting again, simply on account of the uncertainty of judging. It has occurred over and over again during the past season that birds which have been awarded cups as well as first and second prizes at one show have, when reviewed at the next by different judges, been entirely unnoticed. Perhaps the breeders of Dark Brahmas have most cause to complain, inasmuch as birds that would have been branded as vulture-hocked last year, are now considered comparatively clean-legged. What an injustice, then, is this to a breeder who has been doing his best, possibly at considerable cost, to reduce the leg-feathering of the previous year, in order to carry out and meet what then seemed to be the opinion of the judges!

In the absence of a code of rules by which judges as well as breeders should be guided, there appears to be no hope of satisfactory judging.

As regards judges being either breeders or exhibitors, complaints on this head were so loud at Birmingham that I scarcely think this mistake will be repeated.

There is another evil which also requires to be remedied, and that is the want of impartial criticism by journalists. Nothing can be more easy than for a man to write his own character in the pages of a journal when he has free access, at the same time having the power to exclude a competitor from even making a remark in justification of any act complained of. This leads me to inquire how you reconcile the statement in the Journal of the 6th inst. that the Brahmas exhibited at the Devizes Show were not equal to anticipation, whereas it so happens that the cup and second-prize pens exhibited at Southampton were amongst the number; and as they gained a victory over the Crystal Palace and Birmingham cup bird, it follows that the cup pen at Devizes must have been a very superior pen of birds. Added to this, I believe the Oxford cup and first-prize birds were present, as well as the Worcester first. I heard but one opinion expressed at Devizes, and that was a most favourable one; and as regards the Brahmas, I went through the whole class with Mr. Teabay, when that gentleman expressed himself freely, the cup pen evidently being in high favour, as well as the pullets in the two pens exhibited by Mr. Lingwood.—JUSTITIA.

[We wish that you had confided to us your real name. Our reports are from various reporters, and each exercises his own judgment.

"Tis with our opinions as our watches: none
Go just alike, but each believes his own."

—Eds.]

MALAYS.

I MUST take exception to your reply, in an editorial note, to "HAWKINS," in reference to Malay fowls and their position at shows. The reply appears to me altogether erroneous. Let me

ask at starting, What is the object aimed at by committees in poultry exhibitions? Well, some tell us, by printing after the name of the society, that it is for the encouragement of the breeding of our domestic poultry. If you grant me this, it follows as a matter of course, that all established breeds should receive it. Now, the Malay fowl is one of the very oldest. It is true that it is no longer so popular. How can it be when it gets no encouragement? I have often urged in your columns the impossibility of saying beforehand positively what breed of fowls will be most largely entered at any given show—probably, now-a-days, Brahmas or Game—yet sometimes these give, considering their popularity, ridiculously small entries. For instance, at Bristol in 1872, Brown Red cocks ten entries, hens seven; Duckwing cocks nine entries, hens seven; Game cocks any other variety, three entries, hens two entries. Now, is not this worse than ridiculous, when in each class £5 5s. was offered in prize money, besides two silver cups? At the same Show in 1873, Dark Brahma hens mustered twelve pens; any other variety of Game cocks nine, hens five entries. I do not suppose anyone will say that beforehand, he could have predicted this shabby exhibition. But I recollect a worse instance—viz., when at one of the leading southern shows five entries of Buff Cochins contended for three prizes, £3, £2, and £1. In your reply to "HAWKINS," you say, "Rarely are there a sufficient number of Malay entries to pay the amount of the prizes;" but surely you will not tell me in the cases I have mentioned above, or in those mentioned lower down, that the entries were sufficient to pay the prizes. Why, then, are all these classes retained especially when at both these shows Malays, which received a smaller amount of encouragement, greatly exceeded these entries? You then go on to state that it would be a good plan to obtain subscriptions for a special prize. Well, for several years the Malay breeders assisted by special subscriptions the Birmingham Show with this result, that the Birmingham Committee refused to alter the division of the money in accordance with the wishes of the subscribers, so the latter declined their subscriptions, and the Malay prizes have been considerably reduced (another capital form of encouragement). Take, again, the Crystal Palace Committee. Mr. Brooke urged them to give a Malay class at their first Show, and offered them most generously £1 towards it, the result was a class of nine entries. These, with Mr. Brooke's subscription, paid the prize money, yet the encouragement (?) given last November was to offer the smallest prizes in the schedule to the Malays, with this result that only three competitors appeared. Now, contrast with this Bristol, which during 1872 and 1873 has given a fair amount to Malays. In the first year there were twenty-seven entries, in the second twenty-five. Now, I ask any impartial member of a committee to look at these figures following, and carry them out in the only logical way that your reply to "HAWKINS" suggests. At Bristol in 1872 and 1873, the same amount of prize money was offered to all the following breeds, and here are the entries:—

	1872.	1873.		1872.	1873.
Polands.....	14	23	Silver-spangled ditto..	12	22
Black Hamburgs.....	15	23	Gold-spangled ditto ..	21	22
Silver-pencilled ditto ..	16	20	Malay.....	27	25
Gold-pencilled ditto ..	19	37			

Now, all these figures with the exception of Gold-pencilled Hamburgs in 1873, are in favour of the Malay, and according to your reasoning in your note, all except the Gold-pencilled Hamburgs and the Malays ought to be removed from the next prize schedule, a very pretty, and I have no doubt, very popular result!

Now, take Devizes, and I take these two shows as the only shows in the south that have offered a fair encouragement to Malays.

	1872.	1873.		1872.	1873.
Coloured Dorkings....	8	10	Brown Red Game	11	10
Silver-Grey Dorkings .	4	9	Other variety ditto ..	5	10
Other variety ditto ..	8	9	Polands	—	11
Partridge Cochins....	5	8	Black Hamburgs.....	—	9
Other variety ditto ..	6	8	Malays	7	9

Considering the popularity of the Dorkings and the cups offered to them, I say theirs is a miserable display compared with the despised Malay. The Cochins are not so good; in fact, the Polands alone are really better.

Writing as you do with all authority, I cannot but think your reply to "HAWKINS" very injurious indeed to the poor Malays. Considering how they are snubbed on all sides, Editors, committees, &c., the only wonder to me is, that they show-up so well when they are offered a chance, as at Bristol and Devizes. —JOSEPH HINTON, Warminster.

[The object of a poultry show is and ought to be to improve the breeds of our domestic fowls, and if our energetic correspondent can persuade committees to include Malaya in their prize lists, we will neither pen nor publish anything to render his effort still more difficult.—Ens.]

PRIZES FOR RABBITS AT NORTHAMPTON.—Seldom do we find so attractive a schedule. There are eight classes, exclusive of

the Selling class and local classes, also six cups. We wish the Committee that success they deserve.

PORTSMOUTH POULTRY SHOW.

This was held in the Ride Drill Hall, Landport, on the 11th, 12th, and 13th inst. The awards were as follow:—

GAME.—*Black, and other Reds.*—1 and 3, W. H. Stagg, Netheravon. 2, F. Ward, Maidstone. *Any other variety.*—1 and 1, Rev. G. S. Crawley, Devon. *Black.*—*Buff and Copper.*—1, H. Lloyd, jun., Huddersworth. 2, Miss J. Milward, Bristol. 3, E. Thomas, Brecon. c, J. Pares, Guildford. *Any other variety.*—1, E. Trannois, Southsea. 2, H. Feast, Swansea. 3, O. E. Cresswell, Bagshot.

BRAHMAS.—*Dark.*—1, H. Feast. 2, Rev. J. Ellis, Bracknell. 3, O. E. Cresswell. c, R. Crab, Fratton; H. Wood, Southsea.

BRAHMAS.—*Light.*—*Young.*—1, Cup, and 2, A. Williamson, Leicester. 3 and 4, Maynard, Holmewood. c, Mrs. F. Turner, Ringwood. 2, A. Dean, Maiden. *Old.*—1 and 2, — Maynard. 3, Mrs. T. Turner. c, J. Pares; M. Leno, Dunstable. c, — Rodbard, Wington.

DORKINGS.—1 and 3, O. E. Cresswell. 2, T. C. Burnell, Micheldever. *hc*, Virgo & Son, Guildford. c, F. Cheesman, Ashford.

SPANISH.—1, — Brown. 2, R. Samways, Southampton. c, W. Doig, Staines.

ANDALUSIANS.—1 and *hc*, T. Moore, Landport. 2, — Armyst-Burney. 3, — Willey. c, Miss A. J. Adams, Greenock; R. Parker, Southampton.

HAM-BOURS.—*Gold-pencilled.*—1, B. Ashton, Mottram. 2, B. Norton. 3, G. W. Greenhill. *Silver-pencilled.*—1, B. Norton. 2, F. W. Arnold. 3, W. Wise, Landport.

HAMBURGS.—*Gold-spangled.*—1, R. H. Ashton. 2, F. Cheesman. *Silver-spangled.*—1, J. H. Howe, Manchester.

POLANDS.—1, T. P. Edwards, Lyndhurst. 2, A. Cruttenden, Brighton. 3, J. H. Green, Warmisthorpe. *hc*, Capt. Coleridge, Henley-on-Thames. c, F. Alban, Freemantle.

FRENCH.—1, Rev. N. J. Ridley, Newbury. 2, W. Dring, Faversham. *hc*, Lieut. A. H. Parker.

ANY OTHER VARIETY.—1, J. Hinton (Malay). 2, Rev. G. S. Crawley (White Minorca). *hc*, Rev. N. J. Ridley (Malay); J. H. Howe (Black Hamburg); Major Croad (Japanese); O. E. Cresswell. c, Countess of Aylesford, Leamington Spa (Cuckoo Dorking).

BANTAMS.—*Black, and other Reds.*—1, P. Ogilvie, Hambleton. 2, M. Sanford, Dover. 3, J. Pares. *Any other variety.*—1, W. S. Marsh, Deal (Duckwing). 2, O. Nicholson, Lanoport (Duckwing Game). 3, W. Adams, Ipswich (Duckwing). c, J. Bunney, Farnham (Tide Game).

BANTAMS.—*Any other variety except Game.*—1, R. H. Ashton (Black). 2 and 3, Rev. G. S. Crawley (Bantams).

DUCKS.—*Aylesbury.*—1, H. D. Hoare, Southampton. 2, — Copesey, Hilsa. *Rouen.*—1, J. Harvey, jun., Canterbury. 2, Virgo & Son. c, J. Pares; F. Cheesman. *Any other variety.*—1 and 2, Miss A. J. Aiken (Black East Indian).

GREYS.—1 and Cup, A. J. Reed, Portsea. 2, O. E. Cresswell.

TURKEYS.—1, F. Ward. 2, Rev. N. J. Ridley. c, Miss J. Milward.

SELLING CLASS.—1, J. Hinton (Silver Poland). 2, W. Burrows, Diea (La Fleche). 3, E. R. Gray, Frome (Buff Cochins). *hc*, T. Faulkner, jun., Merston, Isle of Wight (Silver-spangled Hamburg); W. Willey (Andalusian); T. Moore (Andalusian). c, — Bishop (Guinea-fowl).

SELLING CLASS.—*Cock or Cocker.*—1, T. W. Anna, Clapham (Partridge Cochins). 2, T. Moore (Andalusian). 3, E. R. Gray (Buff Cochins). *hc*, O. E. Cresswell (White Cochins). c, — Samways (Black Spanish); H. Moore (Gold-pencilled Hamburg); H. Bainton, Southsea (Dark Brahma); C. F. Wilson, Totton (Black Hamburg).

SELLING CLASS.—*Hens or Pullets.*—1, J. Pares (Light Brahmas). 2, T. Moore (Andalusian). 3, Miss A. J. Aiken (Hamburg). *hc*, C. F. Wilson (Light Brahma); H. Browne (Spanish); T. Moore; H. Bainton (Dark Brahma); — Leamy, Lewes. c, W. Westcott, Landport (Dark Brahma); E. W. P. Thomas (Buff Cochins); H. Bainton (Dark Brahma).

PHEASANTS.—1, Mrs. T. Turner. 2, F. Ward. *hc*, E. Pike, Christchurch.

PIGEONS.

POUTERS.—1, H. Pratt, Birmingham. 2, Mrs. Ladd, Calne. **BARS.**—1, *hc*, and *hc*, H. M. Maynard. 2, C. L. Gilbert, Salisbury. c, G. Easton, Landport.

CARRIERS.—1, E. L. Gilbert. 2, H. M. Maynard. *hc*, H. M. Maynard (2); E. F. Wilson, Brighton; E. L. Gilbert.

DRAGONS.—1, C. L. Gilbert. 2, E. Jacobs.

TUMBLERS.—1, — Godman, Gosport. 2, O. Nicholson.

FANTAILS.—1 and *hc*, H. M. Maynard. 2, J. Walker. c, J. F. Loversidge, Newark.

ANY OTHER VARIETY.—1 — Maynard (Red Jacobins). 2, H. Jacobs, Sandown (Autwipers). *hc*, Mrs. Dressing, Farnham (Silver Ruots); H. Gibson (English Owls). c, C. L. Gilbert (Maltese).

SELLING CLASS.—1, R. Donger, jun. (White Dragons). 2, — Maynard (White Jacobina). *hc*, E. S. G. Gibson (Red Bars). c, G. Easton (White Dragons); H. Jacobs (Blackman (Carriers)). c, J. D. Blackman, Southampton (Turbits). G. Parker, Farnham (Antwipers); G. Easton (White Dragons); H. Jacobs.

CAGE BIRDS.

NORWICH.—*Clear Yellow.*—1, Adams & Athersuch, Coventry. 2, W. Walter, Winchester. *hc*, J. Caplin, Canterbury; Adams & Athersuch. *hc*, J. Caplin; W. Walter. c, C. D. Carver, Landport.

COCHINS.—*Clear Buff.*—1 and 2, W. Walter. *hc* and *hc*, Adams & Athersuch. c, — Carver.

NORWICH.—*Evenly-marked or Yellow Variegated.*—1, 2, and *hc*, Adams & Athersuch. *hc*, W. Walter. *Evenly-marked or Buff Variegated.*—1, W. Walter. 2 and *hc*, Adams & Athersuch. *hc*, Adams & Athersuch; W. Walter.

BELGIAN.—*Clear Yellow.*—1, T. Moore. 2, — Davies. *hc*, O. Nicholson. *Clear Buff.*—1, — Davies. 2 and *hc*, O. Nicholson.

BELGIAN.—*Any other variety.*—1, — Moore. 2, O. Nicholson. *hc*, J. Hicks, Landport; O. Nicholson.

LIZARD.—*Gold and silver-spangled.*—1, 2, *hc*, and c, O. Nicholson. c, J. Sims, Southampton.

GOLDFINCH MULE.—1, E. W. Lulham, Brighton. 2, R. Hawman, Middleborough. *hc*, R. Hawman. *hc*, E. W. Lulham; W. Walter. c, A. Cruttenden; W. Walter.

CANARY OR MULE.—*Any variety.*—1, W. Walter. 2, T. Willsher, Chichester. *hc*, E. Arad; O. Nicholson. *hc*, E. W. Lulham; R. Hawman; E. Arnold. c, R. Hawman.

BRITISH BIRDS.—*Any other variety.*—1, Cup, and 2, T. Willsher. Extra 2, W. Boots, Landport. *hc*, T. Willsher; Miss Barnes; O. Nicholson. *hc*, Miss E. Barnes. c, W. Walter.

FOREIGN.—*Any variety.*—1, J. Lewis. 2, W. Walter. *hc*, Mrs. F. Hill; W. Walter; Mrs. Barnes; O. Nicholson.

SELLING CLASS.—1, — Simmons, Portsea.

RABBITS.

LENGTH OF EAR.—1, F. Banks & Co. London. 2, Shaw & Allison, Sheffield.

BLACK AND WHITE, AND BLUE AND WHITE.—1, J. Hume, York. 2, E. W. Cantelo, Newport. *hc*, C. Gray, jun., Doncaster. c, Shaw & Allison.

GREY AND WHITE, AND YELLOW AND WHITE.—1 and 2, A. H. Easton, Hull. *hc*, E. W. Cantelo.

TORTOISESHELL.—1, F. Banks & Co. 2, A. H. Easton. *hc*, Shaw & Allison.

SELF-COLORED.—1, F. Banks & Co. 2, A. H. Easton. *hc*, W. Heath, Hoxton; Shaw & Allison.

FOREIGN.—1, C. Arthur, Melksham. 2 and c, F. Banks & Co. *hc*, Master W. H. Anns, Clapham; Mrs. Dressing.

SELLING CLASS.—1, Shaw & Allison. 2, F. Banks & Co. *hc*, G. E. Gittens, Portsea; — Simmons. c, — Simmons.

CATS.

TANNIES.—1, E. A. Smith, Gosport. 2, — Ellis, Southsea. *hc*, — Samways; W. Mitcheal, Portsmouth. c, Mrs. Jenner, Portsmouth; H. Bainton.

ANY OTHER VARIETY.—1, Mrs. Munn, Shaftesbury. 2, W. Herrig, Alverstoke. 3, W. Baker, Portsea. Extra 3, T. Goddard, Sandport. *hc*, D. Taphin, Farnham; Miss A. J. Walter, Winchester; Mrs. Johnson; Miss Sawney.

KITTENS.—1, — Drewitt. 2, G. Stanfield.

JUDGES.—*Poultry.*—Mr. W. B. Tegelmeier, London; Mr. G. S. Sainsbury, Devizes. *Pigeons.*—Mr. F. C. Esquilant, Brixton, London. *Cage Birds.*—Mr. A. Willmore, London. *Rabbits.*—Mr. E. Owen, London. *Cats.*—Mr. G. Billett, Southampton.

WAVERLEY POULTRY SHOW.

This Show was held on the 12th and 13th of February, in the Corn Exchange, Melrose. The entries were not so numerous as last year, but the quality of the birds in most of the classes was much higher.

Of Silver *Dorkings* there were some very good birds. Dark *Dorkings* were also very good. *Cochin-Chinas* were well represented. Dark *Brahmas* were remarkably good; but Light *Brahmas* were a very indifferent class. The prizes for Black Red Game were well contested. In Game, any other variety, the first prize and cup went to Duckwings; the second were Brown Reds. In our opinion Mr. Harley ought to have been placed with a fine pair of Duckwings. In *Spanish* the first prize and cup were taken by a beautiful pair of birds, the cockerel being very fine in face and comb. In Golden or Silver-spangled *Hamburgs* there were only two entries, both belonging to the Countess of Tankerville, and according to the rules of the Society the second prize was awarded to the Silvers. In *Pencilled Hamburgs*, deservedly first were a fine pair of Golden. In any variety the French got the preference, and Black *Hamburgs* were second. Black Red Game *Bantams* were a fine class. Any other variety of Game *Bantams* were also a good class. The first were a fine pair of Duckwings. For any other variety of *Bantams*, the first prize and cup went to a fine pair of Blacks; second came a fine pair of Gold-laced.

Aylesbury Ducks were really a fine class. Rouen Ducks were also remarkably good. A finer class has seldom been seen at any local exhibition. For Black East Indian the first prize went to a beautiful pair. Of any other variety of Ducks there were only two entries, both from the Countess of Tankerville, the Carolinas being awarded a second prize according to the rules. The other classes need no comment.

The show of *Pigeons* was very good. Pouters were poorly represented; first Whites, and second Blues. Fantails were a good class. Nuns were a fine lot, and the prize birds shown in beautiful plumage; first were a pair of Blacks. Jacobins were not so good. Turbits came next, and a finer class of birds could not have been exhibited; first were a pair of very fine Blues. English Owls were a small class; the first-prize birds were very fine Blues. Tumblers were very good. In the Any other variety, first were a pair of very fine Magpies; and second were Dragons. The Selling class was fair, Black Bars carrying off the first honours.

The *Canaries* were a very fine show.

DORKINGS (Silver).—1, A. Curle. 2, D. Hardie, Hawick. c, Z. H. Heys, Barhead.

DORKINGS (Grey).—1, J. White, Warlsby, Northallerton. 2, R. Reed, Hollinhorst, Canobie.

COCHIN-CHINA.—Cup and 1, G. H. Procter, Durham. 2, Capt. Lyon, Kirkcaldy. c, R. Reed.

BRAMA POOTRA (Dark).—1, W. Swan, Bedlington. 2, Capt. Lyon. *hc*, H. Wilkinson, Earby, Skipton. *hc*, R. Brownlie, Townshead, Kirkcaldy. c, Countess of Tankerville.

BRAMA POOTRA (Light).—1 and 2, Capt. Lyon.

GAME (Black Reds).—1, J. Nelson, Cockshaw, Hexham. 2, D. Harley, Edinburgh. *hc*, A. Brewster, Edinburgh.

GAME (Any other variety).—Cup and 1, R. Stewart (Duckwing). 2, J. Anderson (Brown Red). *hc*, T. J. Robson, Bishop Auckland (Brown Red). c, Hetherington & Taylor, Bedlington (Brown Red); R. Stewart, Blair Adam, Fife (Brown Red).

SPANISH.—Cup and 1, W. Paterson, Langholm. 2, D. Wagh, Melrose Mills, *hc*, G. Amos, Melrose. c, T. Stevenson, Bleachfield.

HAMBURGS (Golden or Silver-spangled).—2, Countess of Tankerville.

HAMBURGS (Pencilled).—1, Mrs. C. Hallyburton, Cupar Angus. 2, Countess of Tankerville. c, Countess of Tankerville. *hc*, K. Mercer, Melrose. c, W. Bearpark, Northallerton; B. Dickson, Selkirk.

ANY OTHER VARIETY.—1, A. McLeall, Barrhead, Glasgow (Creve-Coeur). 2, Countess of Tankerville. *hc*, D. Nichol, Morpeth (Polish). c, D. Waldie, Edinburgh (Scottish Greys).

GAME BANTAMS (Black Reds).—1, R. Brownlie. 2, D. Hardie. *hc*, G. McMillan, Jedburgh. c, Z. H. Heys.

GAME BANTAMS (Any other variety).—1, Miss J. M. Frew, Sinclairton, Kirkcaldy (Duckwing). 2, R. Brownlie (Pile). c, J. Archibald, Earlston (Duckwing).

BANTAM (Any other variety).—Cup and 1, J. Nesbain, Bedlington (Black). 2, Earl of Haddington (Gold-laced). *hc*, R. Frew. *hc*, G. J. Bell, Dundee. c, T. Watson, Freeland, Perth (Silver Sebrights); Lady Majoribanks, Coldstream; Hetherington & Taylor, West Selkirk, near Bedlington (Black).

COCK.—1, W. Swan. 2, A. Scott, Selkirk (Duckwing). *hc*, R. Brownlie (Black Red). *hc*, G. McMillan (Duckwing). c, Miss B. F. Frew, Sinclairton, Kirkcaldy (Cockers' Class). 2, D. Wagh (Spanish). c, J. Ashcroft, Canobie (White Cochins).

DUCKS (Aylesbury).—1 and *hc*, Capt. Lyon. 2, G. Dryden, Selkirk. *hc*, Z. H. Heys. c, Countess of Tankerville.

DUCKS (Rouen).—1, J. Nelson. 2, J. A. Mather, Nithside, Closeburn. *hc*, W. Swan. *hc* and c, D. Hardie.

DUCKS (Black East Indian).—1, Miss A. J. Aitken, Greenock. 2, F. E. Schofield, Murphree. c, T. Stevenson, Bleachfield, Melrose.
DUCKS (Any other variety).—2 and *vhc*, Countess of Tankerville (Carolinas and Sheldrakes).
SELLING CLASS.—1, W. Linton, Selkirk (Crève-Cœur). 2, R. H. Ashton, *vhc*, J. Ashcroft, Canobie (Silver-spangled), *hc*, Countess of Tankerville. c, Earl of Haddington (Black-breasted Gull).
TURKEYS.—1, D. Hardie. 2 and *hc*, Earl of Haddington.
GESE.—1, J. Hardie. 2, Mrs. Brydson, Langton Mans, Dunse. c, M. Turnbull, Melrose.

PIGEONS.

POUTERS.—1 and 2, M. Gill Skinner, Edinburgh. c, J. Fawcett, Whitby.
FANTAILS.—1, A. Smith, Broughty Ferry. 2, J. F. Loversidge, Newark. *hc*, J. Fawcett. 2, W. Brydson; 3, Ireland, Priory.
NENS.—1, T. Honeyman, Melrose. 2, W. Milne, jun., Kelso. *hc*, R. Frew. c, R. Laurie, Melrose.
JACOBS.—1, J. M. D. Brown. 2, W. Brydson. c, A. C. Lang.
TURKITS.—1, T. Honeyman. 2, W. Milne, jun. c, P. C. Bruce.
OWLS (English).—1, T. Honeyman. 2, R. Laurie.
TUMBLERS.—1 and 2, W. Brydson.
ANY OTHER VARIETY.—1, Mrs. R. Fawcett, Kirkcaldy (Magpies). 2, J. M. D. Brown (Yellow Dragoons). c, T. Honeyman; 3, Ireland; M. Gill Skinner (Carriers).
SELLING CLASS.—1, M. Gill Skinner (Barbs). 2, A. Hutton (Black Trumpeters). c, G. Ames (Tamblers); A. Hutton (Ice).

CANARIES.

Dov (Yellow or Buff).—Cock—Medal and 1, J. Kemp, Galashiels. 2, J. Hardie, Galashiels. *hc*, G. Laidlaw. c, R. Hunter. *Hen*.—1, J. Hardie. 2, J. Kemp. *hc*, R. Hunter. c, K. Laurie, Ahey Park.
Don (Yellow or Buff Flecked).—Cock—1, J. Hardie. 2, G. Laidlaw. *hc*, J. Kemp. c, R. Hunter. *Hen*.—1, J. Kemp. 2 and c, K. Hunter. *hc*, J. Ritchie, Selkirk.
CAGE BIRD (Canaries excepted).—1 and c, J. Crawford, Melrose (Goldfinch). 2, R. Graham, Melrose (Goldfinch). c, A. Bell, Melrose (Goldfinch).
CANARY (Common).—1, W. Turnbull, Hawick. 2, T. Mann, Newcastle.
JUDGES.—Poultry and Pigeons: Mr. Burn, Whitby, Yorkshire. Canaries: Mr. Park, Galashiels.

HANLEY POULTRY SHOW.

This was held on the 11th, 12th, and 13th inst. The following awards were made:—

DORRINGS.—Coloured.—1, Extra, and 2, Mrs. Arkwright, Chesterfield. 3, J. White, Warley, Northampton. *Any other variety*.—1, J. Robinson, Garstang. 2, Miss E. Williams, Henllys Berriew. 3, Wren & Page, Lowestoft.
SPANISH.—1 and Extra, H. Beldon. Bingley. 2, J. Walker, Standford. 3, E. Jackson. *hc*, K. Leeming, Broughton; K. Newbit, Epworth.
COCHINS.—Cinnamon or Buff.—1, Cup, and 2, W. A. Taylor, Manchester. 2, Mrs. Allsop, Worcester. *hc*, Mrs. Allsop; T. F. Andsell, Cowley Mount, St. Helens; H. Tomlinson, Birmingham. *Brown and Portage-feathered*.—1, T. Stretch, Ormskirk. 2 and *hc*, W. A. Taylor. 3, Mrs. Allsop. *Any other variety*.—1 and 2, Rev. R. S. Woodgate, Tunbridge Wells. 3, H. Beldon.
BRAHMA POOTRAS.—Dark.—1, Extra, and 2, T. F. Andsell. 3, A. Rigg, Liverpool. *hc*, J. Widdowson, Meynell Langley; G. F. Withnourse, King's Heath, Birmingham; E. Pritchard; Tettenhall; J. Watts, King's Heath, Birmingham. *Light*.—1, Storer, Brewood. 2, Bloodworth, Cheltenham. 3, Mrs. Buchan, Leek.
POLISH.—1, Extra, and 3, H. Beldon. 2, J. Royle, Burslem. *hc*, P. Unsworth, Newton-le-Willows; J. Magnall, Leigh; W. Boarpark, Ainderby Steeple, Northalerton; M. Nicholls, Peel, Isle of Man.
CREVE-CŒUR.—1 and 3, R. B. Wood, Uttoxeter. 2, Miss E. Williams, Henllys Berriew. *hc*, W. H. Crabtree, Manchester; W. Dring, Faversham.
HOUDANS.—1 and 2, R. B. Wood. 3, W. G. Quibell, Newark.
ANY OTHER VARIETY.—1, Rev. A. G. Brooke, Shrewsbury. 2, R. Toft. 3, J. S. Booth.
GAME.—Black-breasted Red.—Cock.—1 and Extra, J. Fletcher, Stoneclough, Manchester. 2, G. Bagnall, Drycote. c, C. Chaloner, Chesterfield, Whitwell. *hc*, Duke of Sutherland, Trentham (8); C. Chaloner, Chesterfield. *Hens*.—1, Duke of Sutherland. 2, C. Chaloner. 3, W. C. Phillips, Worcester. *Brown Red*.—Cock.—1 and Extra, C. W. Brierley, Middleton, Manchester. 2, J. Forsyth, Wolverhampton. 3, J. Fletcher. *Hens*.—1, C. W. Brierley. 2, Duke of Sutherland. 3, T. Mason, Lancaster. *hc*, C. W. Brierley; E. Davis, Worcester. *Duckings or other Greys and Blues*.—1 and Extra, E. C. Gilbert, Peckridge. 2, E. Aykroyd, Leeds. 3, C. Chaloner. *Any variety*.—1, Duke of Sutherland. 2, C. W. Brierley. 3, J. Ridgway.
HAMBURG.—Black.—1, Duke of Sutherland. 2, H. Beldon. 3, N. Marlor, Golden-spangled. —1, H. Beldon. 2 and 3, Duke of Sutherland. *hc*, W. A. Hyde. *Silver-spangled*.—1, Extra, and *hc*, Duke of Sutherland. 2 and 3, H. Beldon. *Golden-pencilled*.—1, H. Beldon. 2 and 3, Duke of Sutherland. *hc*, H. Beldon. *Duke of Sutherland, Silver-pencilled*.—1 and 3, Duke of Sutherland. 2, H. Beldon.
GAME BANTAMS.—Black-breasted Red.—1, Extra, and 2, Capt. Wetherall, Loddington, Kettering. 3, W. F. Addie, Preston. *hc*, W. Griffiths, Nantwich; T. Colclough; J. Lane, Sudbury, Derby; J. W. Morris, Rochdale; T. Barnett, Walsall. *Any variety*.—1, J. Smith, Southwell, Notts. 2, E. Walton, Manchester. 3, F. Matfield. *hc*, F. Steel, Halifax (2).
BANTAMS.—Black or White Clean-legged.—1 and Extra, H. Beldon. 2, E. Walton. 3, E. Cambridge, Bristol. *hc*, W. H. Shackleton, Bradford; J. Watts; W. A. Taylor. *Any other variety*.—1, E. Walton. 2, E. S. Lowndes, Stoney Stratford. 3, Duke of Sutherland. *hc*, Duke of Sutherland; H. B. Smith, Preston; Mrs. Woodcock; C. H. Poole, Bridgwater; G. Anderton, Accrington; M. Leno, Dunstable, Beds; H. Drycott; H. Plant.
DUCKS.—Rouen.—1, P. Unsworth. 2, Duke of Sutherland. 3, S. Mellor. *White Aylesbury*.—1, Duke of Sutherland. *Any variety*.—1 and 2, Duke of Sutherland. 3, J. Walker. *hc*, J. Watts.
GESE.—White.—1, J. Walker. 2, Duke of Sutherland. *Grey*.—1, J. Walker. 2, Duke of Sutherland.
TURKEYS.—1, Rev. N. J. Ridley, Newbury.
SELLING CLASS.—1 and Extra, J. Robinson. 2, T. Gismey.
SELLING CLASS.—1, H. Beldon. 2, Miss E. Williams. 3, J. Mansell.
CARRIERS.—1, Extra, and *vhc*, R. Fulton, London. 2 and Extra 2, E. Horner, Harewood, Leeds. c, J. Thompson.
POUTERS.—1, J. Hawley, Bradford. 2, R. Fulton. *hc*, Mrs. Ladd, Calne, Wilts; E. Horner. c, T. Taylor, Crewe.
TUMBLERS.—1, R. Fulton. 2, J. Fielding, Rochdale. *hc*, R. Fulton; E. Horner. c, W. Adams, Beverley.
JACOBS.—1 and Extra, R. Fulton. 2 and c, J. Thompson. *vhc* and *hc*, E. Horner.
BARAS.—1, R. Fulton. 2, H. Yardley. c, W. Tomkinson, Smallthorne.
OWLS.—1, Extra, and 2, J. Fielding. *vhc*, E. Horner. *hc*, T. W. Townsend. c, H. Yardley.
FANTAILS.—1 and *vhc*, Rev. W. Serjeantson, 2, J. W. Edge, Birmingham. *hc*, E. Horner. c, J. Taylor, J. Walker, Newark; F. J. Loversidge.
NENS.—1, Rev. J. Brook, Shrewsbury. 2, T. E. Dean. (The whole class beautifully trimmed).
TURKITS.—1, J. Fielding. 2, E. Horner. *vhc*, J. Fielding; T. W. Townsend. c, H. Yardley.

DRAGONS.—1 and 2, W. H. Mitchell, Birmingham. *vhc*, S. Cliff, Nantwich; W. Gannon, Chester. *hc*, J. Taylor; R. Fulton; J. Watts.
ANTWERPS.—1 and *vhc*, J. Stanley, Blackburn. 2, H. R. Wright, Birmingham. *hc*, W. Gannon (2); E. Horner.
ANY OTHER DISTINCT VARIETY.—1, R. Fulton. 2, H. Draycott, Leicester. *vhc*, J. Leclerc, Liverpool; T. W. Townison. *hc*, T. Gannon; E. Horner, Leeds (2); Mrs. Wood, Uttoxeter.

RABBITS.—Lop-eared.—1 and *vhc*, J. A. Weaver, Leominster. 2, Dr. W. B. Boden, West Hartlepool. *hc*. — Webbs, Bilston. c, C. Barnish, Newcastle; Shaw & Albion; — Webbs; J. A. Meigh, London. *Any variety, irrespective of length of ears or weight*.—1, W. Whitworth, jun., Manchester. 2, S. G. Hudson, Hull. *vhc*, S. Ball, Bradford. *hc*, W. C. Hancock, Northampton. c, W. Hall, Leek; Mrs. Buchan, Leek (2); W. H. Webb; A. Hudson; W. Whitworth, jun.

CRYSTAL PALACE BIRD SHOW.

This was opened on the 15th inst., and will be concluded to-day. The entries amounted to upwards of a thousand, and great interest was manifested by the public in the Show.

Perhaps the most notable of the British birds was the class for Nightingales—thirteen birds, and most of them in high condition and perfect feather, and yet one was surprised at the variety of form and colour, scarcely any two being alike. We are generally apt to think that most wild birds are alike, if not quite so in colour they are in form; but a visit to the Bird Show will soon disabuse us of this idea. Even the well-known Robin was there to be seen with very long legs, beside one of more comely make; so to a naturalist these shows are exceedingly interesting. Witness again the common or song Thrush as seen at the Crystal Palace; one with nearly a white breast spotted finely with black, and within a cage near it another of brilliant orange colour. The Goldfinch class was good, and contained as usual several Cheverils. The Linnets were an average class; the Bullfinches a brilliant lot. The first prize went to a very neat and compact bird, and good in colour. In the Redpole and Siskin class the Judges thought it advisable to award a prize to each variety. Only one Missel Thrush was shown, and this, strange to say, was white or nearly so, the markings only faintly showing on a white ground. The Magpies were a good class, and not only contained some handsome birds, but also excellent talkers. The whole class of Jays were out of condition save one, which deservedly got the prize for great beauty. Only a couple of Jackdaws, one Starling, and one pair of Lesser Whitethroats were present. The Blackcaps were good. Amongst the curiosities were a Pied Blackbird and a Brown Cinnamon cock Blackbird, neither in good feather. In the foreign classes the Grey Parrots were not up to the mark. The great Sulphur-crested Cockatoos were fine, and so the Rose-colour. Only one Leadbeater was sent, and this not a good specimen. The Parakeets were in force, and much admired; and there were some splendid Lories, very fine in colour; also a Chilean Starling, good in the latter quality. There were two varieties of Piping Crow from Australia, Waxbills (the African and the St. Helena), Madagascar and Australian Finches, Cardinals, and also Virginian Nightingales, and others too numerous to mention. Altogether the Show was rich in variety, and reflected great credit on the Superintendent of the Natural History Department at the Crystal Palace, Mr. W. F. Wilson, of whom we can say that he was courtesy personified, and was also unremitting in his attention to the wants and comforts of his feathered friends. We hope to see his cheery face on such occasions for many a long year to come. The Judges of this department were Mr. John Jenner Weir, F.L.S., and Mr. Harrison Weir, F.R.H.S., who seemed to enjoy and almost revel in the discharge of the duties of their office.

Norwich (Clear Yellow).—1, Adams & Athersuch, Spon End, Coventry. 2, W. Havers, Norwich. 3, Bemrose & Orme, Derby. Extra 3, Bemrose & Orme; G. & J. Mackley, Norwich; J. Doel, Stonehouse. *vhc*, P. Flexney (3), Caledonian Road, London; Adams & Athersuch; J. Doyh, Nottingham; W. Walter, Winchester. *hc*, J. Doel; T. Newmark & Sons, Crystal Palace; T. Smeaton & J. Baxter, Nottingham; P. Flexney; Adams & Athersuch (2); T. Mann, Camberwell New Road. c, Moore & Wynn; R. Whitaker; G. & J. Mackley. *Disqualified*, P. Flexney.

Norwich (Clear Buff).—1, P. Flexney. 2, T. Smeaton & J. Baxter. 3, J. Doel. Extra 3, Adams & Athersuch. *vhc*, J. Doel; P. Flexney (2); Adams & Athersuch; W. Walter (2); S. Bunting, Derby. *hc*, Moore & Wynn; W. Havers (3); Colmison & Alden, Norwich; G. & J. Mackley (2). c, J. Doel; J. Carnell, Coventry; P. Flexney; Adams & Athersuch; Colmison & Alden (3); G. & J. Mackley.

Norwich (Marked or Variegated Yellow).—1 and 2, Adams & Athersuch. 3, H. D. Audley. *vhc*, Adams & Athersuch; W. Havers; G. & J. Mackley. *hc*, Moore & Wynn; S. Tomes, Northampton; W. Walter; W. Havers; G. & J. Mackley (2).

Norwich (Marked or Variegated Buff).—1 and 2, Adams & Athersuch. 3, W. Walter. *vhc*, J. Carnell; G. & J. Mackley. *hc*, S. Tomes; W. Walter; G. Gayton, Northampton. c, H. D. Audley, Leicester; Moore & Wynn (2); T. Dove, Sutton in Ashfield; W. Havers (2); G. & J. Mackley.

Norwich (Marked or Unevenly-marked Yellow).—1, Adams & Athersuch. 2, S. Bunting. 3, J. Carnell. Extra 3, H. D. Audley. *vhc*, Adams & Athersuch; R. Whitaker. *hc*, J. Doel; J. Carnell; Adams & Athersuch; S. Bunting; Colmison & Alden. c, G. & J. Mackley (3).

Norwich (Marked or Unevenly-marked Buff).—1, T. Smeaton & J. Baxter. 2, J. Carnell. 3, Bemrose & Orme. *vhc*, P. Flexney; Adams & Athersuch (2); W. Walter; G. & J. Mackley. *hc*, T. Mann; W. Walter. c, Moore & Wynn; T. Mann; W. Havers; Colmison & Alden (2); G. & J. Mackley (4).

Norwich (Marked or Variegated Crested Yellow).—1, Bemrose & Orme. 2, G. Cox, Northampton. 3, Moore & Wynn. *vhc*, W. Havers; G. & J. Mackley. *hc*, Colmison & Alden; G. & J. Mackley; Moore & Wynn. c, J. Martin, Northampton; W. Walter.

Norwich (Marked or Variegated Crested Buff).—1, J. Tarr, Caledonian Road, London. 2, Colmison & Alden. 3, G. Cox. *vhc*, J. Tarr; W. Havers. *hc*, Moore & Wynn; C. B. Band, Forest Hill; G. Chipson, Northampton; W.

Havers (2); G. & J. Mackley (2). c, G. Cox; Moore & Wynn (2); J. Martin; Collinson & Alden (2); G. & J. Mackley.

Nonwicon (Yellow, with Clear Grey or Dark Crest).—1 and 2, W. Havers. 2, Collinson & Alden.

NORWICH (Buff, with Clear Grey or Dark Crest).—1, Collinson & Alden. 2 and 3, G. & J. Mackley. *vhc*, H. Gibbs, South Brent; W. Walter; W. Havers; G. & J. Mackley. *hc*, W. Waller; W. Havers; J. Goode, Leicester. c, G. Cox; W. Havers; Collinson & Alden; G. & J. Mackley.

BELGIAN (Clear and Ticked Yellow).—1 and 2, J. Doel. 3, J. Rutter, Sandorland. *vhc*, J. Doel; H. Gibbs (2); C. J. D. Carver, Lampout; T. Dove; S. Bunting; J. Rutter (2). *hc*, J. N. Harrison, Belper. c, W. Hurley, Bow; J. N. Harrison.

BELGIAN (Clear and Ticked Buff).—1, H. Gibbs. 2, J. Doel. 3, S. Bunting. Extra 3, J. N. Harrison. *vhc*, J. Doel (4); C. J. D. Carver; S. Bunting; J. Rutter (2). *hc*, T. Dove.

BELGIAN (Variegated Yellow).—1, 2, and 3, J. Rutter. *vhc*, S. Bunting; W. Hurley; J. N. Harrison.

BELGIAN (Variegated Buff).—1 and *vhc*, J. Rutter. 2, J. Bayes. 3, T. Dove.

LONDON FANCY (Jouque).—1, Brodrick, Chudleigh. 2 and 3, J. Waller, rimbush. *vhc*, T. Clark, Sutton (2). *hc*, J. Waller (3). c, J. Price, Fimblec; T. Mann; A. Johnson, Horsleydown.

LONDON FANCY (Mealy).—1, Brodrick. 2 and 3, J. Waller. *vhc*, T. Maon; J. McMillin, Hornsby (2). *hc*, T. Clark (2); J. McMillin (3); J. Waller.

LIZARDS (With Broken Caps and Pied Wings and Tails).—1, W. W. Fairbrass, Canterbury. 2, Adams & Athersuch. 3, G. Tuckwood, Nottingham. Extra 3, Adams & Athersuch. *hc*, Adams & Athersuch; M. Burton; G. Tuckwood. c, W. Watson, jun; G. Tuckwood.

YORKSHIRE (Marked or Variegated).—1, J. Stevens, Middlesbrough. 2, W. Barnes, London. 3, J. Brown, jun, Penrith. *vhc*, L. Belk, Dewsbury; J. Brown, jun; G. & J. Mackley.

CINNAMON (Jouque).—1, L. Corti, London. 2 and 3, J. Waller. Extra 3, J. Stevens. *vhc*, Moore & Wynn; W. Corden, Dartford (2); S. Tomes; W. Castle, Camberwell; J. Waller. W. Watson, jun, Darlington; J. N. Harrison. *hc*, J. Doyh (2), c, Moore & Wynn.

CINNAMON (Buff).—1 and 2, J. Waller. 3, Moore & Wynn. *vhc*, F. R. Tebbitt, Leicester. *hc*, W. Barnes, Northampton; J. Waller (2). *hc*, J. Waller (3); J. N. Harrison. c, W. Stanford, Northampton; G. Cox; S. Tomes (2); J. Waller; J. Doyh.

CINNAMON (Marked or Variegated).—1, S. Tomes. 2, L. Belk. 3, G. Cox. *vhc*, Moore & Wynn; S. Tomes; L. Belk; J. Stevens; J. Brown, jun. *hc*, C. Castle; J. Baxter, Newcastle; W. Barnes. c, A. Skinner, Faversham.

ANY OTHER VARIETY OF CANARY.—1 and 3, J. Smethurst, Polefield, Prestwich (Clear Buff and Silver Lizard). 2, T. Dove (Golden-spangled Lizard). Extra 2, F. R. Tebbitt; T. Dove. 3, J. Smethurst. Extra 3, L. Belk (Copy); J. Stevens (Yellow Copy). *vhc*, Moore & Wynn (Crested Cinnamon) (4); Fawcett & Anderson, Baidon (Buff Copy and Clear Yorkshire); J. Martin (Buff-crested Cinnamon); R. Ritchie, Darlington (Silver-spangled Lizard). *hc*, C. Holdsworth, Bradford (Yorkshire Yellow); W. Waller (Silver-spangled Lizard); W. W. Fairbrass (Golden-spangled Lizard). c, Dr. Circus (Golden Green); L. Belk (Clear Yellow Green); W. W. Fairbrass (Golden and Silver-spangled Lizard) (5).

MULES.

GOLDFINCH (Evenly-marked Yellow).—1 and 3, J. Doel. 2, R. Hawman, Middlesbrough. Extra 3, J. Baxter. *vhc*, J. Doel; W. Stephens; J. Brown, jun. *hc*, W. Walter.

GOLDFINCH (Evenly-marked Buff).—1, J. Doel. 2, J. Robson, Bedfordton. 3, J. Baxter. *vhc*, J. Doel (2); R. Poole; J. Stevens; G. & J. Mackley (2). *hc*, W. Walter; W. Barnes; T. Schweiss. c, Moore & Wynn; M. Burton; W. O. Hayes, White St., S.E.; T. Harrison.

GOLDFINCH (Any other class of Yellow).—1 and *vhc*, J. Doel. 2, J. Goode. Special and 3, J. Brown, jun.

GOLDFINCH (Any other class of Buff).—1 and *vhc*, J. Doel. 2, R. Hawman. 3 and special 2, G. & J. Mackley. Special, J. Brown, jun. *hc*, M. Burton; J. Price; W. Barnes.

GOLDFINCH (Dark Jouque).—1, E. Stansfield. 2, S. Tomes. 3, W. Barnes. *vhc*, G. Cox; J. Baxter; S. Bunting. *hc*, E. Stansfield; G. L. Belp (Copy); Middlesbrough (2); J. Goode. c, M. Burton; T. Maidon, Grafton St., Fitzroy Sq.; J. Baxter.

GOLDFINCH (Dark Mealy).—1, G. & J. Mackley. 2, G. Cox. 3, Moore & Wynn. *vhc*, E. Stansfield, Bradford (2); T. Dove; S. Bunting. *hc*, Moore & Wynn; R. Hawman. c, W. Waller.

LINNET.—1, J. Stephens. 2, J. Spencer, South Shields. 3, J. Doel. *vhc*, W. Hurley, Baidon; J. Brown, jun. c, J. Doel; B. Lancaster.

ANY OTHER VARIETY.—2, E. Stansfield. Equal 2, J. Brown, jun; G. & J. Mackley. *vhc*, B. Lancaster (2). *hc*, E. Stansfield; Mrs. C. Long.

NORWICH (Six in one Cage).—1 and 2, Moore & Wynn. Extra 2 and 3, G. & J. Mackley. *vhc*, S. Tomes; W. Walter; W. W. Fairbrass; D. Shosmith, Canterbury. *hc*, R. Whitaker; G. & J. Mackley.

BELGIAN (Six in one Cage).—2, H. Gibbs.

LIZARDS (Six in one Cage).—1, W. W. Fairbrass. 2, J. Martin, Salford. 3, R. Ritchie. *vhc*, J. Ward, Hythe; R. Ritchie; G. & J. Mackley. c, W. C. W. Selkirk (2); C. W. Hooke.

GOLDFINCH (Six in one Cage).—1 and 3, J. Doel. 2, E. Stansfield. *hc*, G. & J. Mackley. c, J. Baxter.

BRITISH BIRDS.

BULLFINCH.—Prize, J. Drake, Ipswich. *hc*, T. Willsher, Chichester. c, G. Cox; G. & J. Mackley.

GOLDFINCH.—Prize, J. N. Harrison. *hc*, H. Gilbert, H. Pigeon, Redland, Bristol. c, N. Walker, City Road; B. Lancaster; T. Willsher; J. Goode; H. Pigeon.

LINNET.—Prize, W. Carrick, Middlesbrough. *vhc*, G. & J. Mackley. *hc*, J. Stevens.

REDPOLE OR SISKIN.—Prize, J. Drake. Prize, G. & J. Mackley. *hc*, Collinson & Alden; G. & J. Mackley. c, W. Walter.

SKYLARK.—Prize, W. Walter. *hc*, J. S. Benton, Rochester. c, J. Watson; G. & J. Mackley.

ROBIN.—Prize, G. Brown, Northampton. *hc*, J. Drake. c, L. Cosavella, Clifton Street, E.C.

BLACKBIRD.—Prize, G. & J. Mackley. *hc*, W. Holman.

SONG THRUSH.—Equal Prize, T. Land, Norwood; J. S. Benton. *vhc*, A. Skinner.

STARLING.—Prize, W. Hutton.

MAID.—Prize and *hc*, Mrs. M. A. Robinson, Sydenham. *hc*, G. Arthnr.

JAY.—Prize, G. & J. Mackley.

JACKDAW.—Prize, S. Fisher, Peckham.

ANY OTHER VARIETY.—Prize, J. Pratt, Edgware Road (Brown Blackbird); G. Geering, Brighton (Pied Blackbird); A. Skinner. *vhc*, J. Young, Notting Hill (Cala, Blue, and Marsh Tits); G. Cox (Chaffinch); T. Willsher (Yellowhammer). *hc* and c, Mrs. W. Mostyn (Reed Sparrows and Chaffinch).

BIRDS OF PASSAGE AND MIGRATORY BIRDS.

BLACKCAP.—Prize, J. Young. *vhc*, L. Cosavella.

NIGHTINGALE.—Prize, L. Cosavella. *vhc*, G. Coram; L. Cosavella. *hc* and c, R. F. Sawyer.

WHITETHROAT, OR ANY OTHER SPECIES OF WARBLER.—Prize, L. Cosavella.

ANY OTHER VARIETY.—Prize, J. Young (Great Grey Shrike).

FOREIGN BIRDS.

CARDINAL.—Red-headed.—Prize and *hc*, T. Newmarch & Sons.

NIGHTINGALE.—Prize and *hc*, Mrs. M. A. Robinson, Sydenham. *hc*, G. Arthnr.

SPARROWS.—Jura.—Prize, C. A. Stead, Peckham Rye. *hc*, T. Newmarch and Sons (2). Coral-necked.—Prize, W. Walter. *hc*, S. R. Owen. Diamond.—Prize, G. T. Harrison. c, A. Johnson.

DOVES.—Small.—Prize, A. Johnson. *Barbary or Ring*.—Prize, J. Lutchford, Norwood.

LOVE BIRDS.—Prize, G. & J. Mackley.

PARAKEETS.—Australian Grass.—Prize, Mrs. Miller, Norwood. *hc*, G. T. Harrison. W. Walter. c, S. R. Owen. *Australian or Broad-tailed*.—Prize, T. Newmarch & Sons. *Ring-necked or Indian*.—Prize, A. Bell. *hc*, T. Newmarch and Sons; Mrs. Wilkin.

PARROTS OR PARAKEETS.—Any other variety of Small.—Prize, A. Johnson (Turquoise).

COCK-TEALS.—Prize, J. Groom, Camden Town.

PARROTS.—King.—Prize, F. Schweiss, Birmingham. *Grey*.—1, F. Schweiss, Birmingham. 2, G. Macdonald. *Green*, or any other variety of large, except *Grey*.—1, W. Walter. 2, F. Schweiss (Lowry).

COCKATOOS.—Leadbeater or Rose-breasted.—1, J. Battershill. 2, S. Fisher. *vhc*, Mrs. N. Binks. *Lenon or Orange crested*.—Prize, M. George; W. Walter. *hc*, F. Schweiss. Any other variety.—Prize, T. Newmarch & Sons.

ANY OTHER VARIETY.—Equal Prize, T. Newmarch & Sons (Macaw); Mrs. J. Cross (Chilian Starling); S. R. Owen (Pair of Bengalees); W. Walter (Small Red Lory). *vhc*, H. King (Australian Magpie); A. Johnson (Australian Banded Finch and Collection of Australian Finches). *hc*, T. Newmarch & Sons (Bronze Mannikin and Parson Finch); C. A. Stead (Brazilian Sate Bird); W. Walter (Madagascar). c, A. Johnson (Queensland Red-necked Finches); W. Walter (Pair of singing Finches); T. Newmarch & Sons (Spice Birds).

JUDGES.—Canaries: Messrs. G. J. Barnesby, Moore, and Willmore. *British and Foreign Birds*: Mr. J. J. Weir, F.L.S.; Mr. H. Weir, F.R.H.S. Assisted by Mr. F. W. Wilson.

DRESSING A CANARY FOR EXHIBITION.

In your issue of the 6th inst. I read a letter on the above subject with mingled feelings of astonishment and disgust. Is it possible that such practices as those recommended therein are in reality perpetrated? If so, I can only say that the sooner Canary shows are brought to a close the better, as it is quite evident that honest fanciers can have no chance of success. Your correspondent, who I have frequently noticed acts in the capacity of Judge, suggests that judges should have an interest in birds sent for exhibition, and adds, "If he (the judge) be not on your side he will slate you." This may in a great measure account for the in-and-out judging that has taken place this season, and which has caused so much dissatisfaction among fanciers generally. I know several birds which in the earlier shows were very successful prizetakers, but a little further on, in the same company and with the same judges, or one of them, have vacillated between first-prize winner and not being mentioned at all. The birds were shown upon each occasion in faultless condition, but I know for a certainty that the judges had no personal interest in them, and this would appear to be the true key to the mystery of their being passed unnoticed subsequently. I may here mention that a friend of mine purchased from a gentleman and an exhibitor, living not a hundred miles from Derby, a Buff Cinnamon cock. This bird was represented by the vendor as having been exhibited at a show where he was said to have gained a second prize. To the astonishment and mortification of my friend he discovered, after his moult in September last, a white feather in the centre of his tail. Further comment, I presume, is needless; the facts speak for themselves; and the sooner committees of bird shows adopt more stringent rules and care in the selection of proper judges to prevent these dishonest practices the better.—C. D. HALLIBURTON.

OUR LETTER BOX.

FOWLS EGG-EATERS, &c. (X. Y. S.).—Quackery is doing much mischief among poultry. Pulverised spar and earthenware are as useful to you as a hith wheel would be to a carriage. You need regret no longer that you have not given oyster shells, for they are worthless; the same may be said of coal ashes. Wood ashes are excellent, and make the best bath a fowl can have, but coal ashes cause them much suffering and discomfort. It is always considered that fowls first eat eggs for the sake of the shell, because they have not access to the ingredients that compose it. Lims is the principal ingredient, and as there is much of it in the hull of corn, they get some in that way, but they should be provided with a heap of bricklayers' rubbish. If each run is not provided with grass, heavy sods of earth should be cut, covered with growing grass. If they are to be had some lettuce should also be given, but they must be given whole. Take away their trough, and let them have no food by them. Feed by hand morning and evening on slaked barley meal or ground oats; at midday give some whole maize or house scraps. This, with the road grit, bricklayers' rubbish, grass and other green food, should keep them in perfect health. If they are so they will not eat their eggs, but as it is quite true that they become fond of the egg itself, you must try to cure them. First, let them be watched, and as soon as the hen gives notice she has laid, she must be driven from the nest, and the egg must be taken away. We have sometimes cured them by putting very hard composition eggs in their nests and about their haunts. They peck at them without making any impression, and they turn them over and over till they give it up for a bad job.

GAME COCK CATARRHED AND ABSCESS (T. Andrews).—We believe a moderate use of stimulants will relieve the bird, and it will be prudent to precede them with a tablespoonful of castor oil. Six hours after this has been taken give a small feed of stale bread steeped in strong ale, and continue it for a few days night and morning. The disappearance of the snow will probably be the best medicine. The tumour or abscess may be removed by opening the skin. It is not a serious operation, but although the birds do not die, they become eyesores from the contraction that always follows, and they seldom do well.

TUMOUR IN DORKINGS (O.).—We believe the sac or tumour you enclosed to us is merely the effect of frost. The wattle is the part that feels frost first in a Dorking cock, then the points of the comb's serrations, and then the toes. All cocks feel the frost in the comb or wattle more or less. We advise you to leave them. They will get smaller, but will always be somewhat enlarged.

The diarrhoea you mention is caused by the fowls eating snow. Snow is a violent purgative to all birds, and reduces them to mere skeletons.

POULTRY MANAGEMENT (Constant Subscriber).—It is always bad to have but one cock, and we therefore advise you to keep both. We must warn you that you are interbreeding in a manner that will make your birds valueless. Hamburgs will not do for sitters. You should not have made the condition you did in buying, but having made it you must keep it. We have never heard of such a one before.

HEN'S INTESTINE PROTRUDING (J. H. E.).—Replace it with a tallow candle, and then syringe gently with strong alum water. Put the patient in a small basket filled with soft straw. If there is any effort made by her as though she would lay, the egg passage must be so thoroughly lubricated with sweet or castor oil that the egg will come away easily. It was in trying to lay that the injury was done in the first instance. It is not incurable, but the time that has elapsed makes it serious.

DORRING PULLETS DYING (C. M. H.).—It is more than probable the pullet you have lost and the present sufferer are victims of the same disorder, and that one was, and the other is, egg-bound. When in that state the sufferer walks and stands like a penguin, with tail on the ground and legs straddling wide apart. The cause is, the egg is stopped in the passage, and cannot be laid without assistance. Pullets are subject to this obstruction with their first eggs, and it is for this reason so many of the early ones are stained when they are laid. The cure is to take a wing feather, dip it in a vessel full of castor oil, saturate it thoroughly, and pass it up the egg passage till it meets the egg. It will, probably, be laid directly. In some extreme cases it is necessary to hold the hen head downwards, and pour oil into the passage. The egg must not be handled, as in most cases it is a fatal injury to break it in the passage.

COCK HEN-PECKED (J. C. B.).—The only plan to adopt is to separate the cock from the hens till his comb is entirely healed. They will, probably, give him rest after a time of separation. It is quite true that the cock will stand to be eaten as though he liked it.

SHOW LABELS NOT ARRIVING (Idem).—Inquire at the post office, and ascertain the cause of delay and the author of it. The entry money should be returned by some one.

WHOLESOME FOOD (E. M. P.).—We consider "wholesome food" for poultry to be the best barley meal or ground oats slaked with water morning and evening, and whole corn or house and kitchen scraps at mid-day. We keep and have kept many hundreds of fowls, we give them nothing but the food we have named, and if they will not eat we starve them till they do. We think poorly of stock-birds that have suffered from leg-weakness. Brahmas perch, but they only want perches 2 feet from the ground. Common oatmeal is more expensive feeding than the best. Fowls will not eat the ordinary ground oats. When mixed they look like wetted chaff. If you cannot get the ground oats that mix into a paste, you will do better to give barley meal. No fowls can do well on a wooden floor.

PREPARING FOWLS FOR EXHIBITION (A. F. H.).—Hamburgs require only to be in perfect health and scrupulously clean. Spanish improve by being shut-up in a dark place for a week before exhibition. By dark, we mean a semi-light, but nothing like broad daylight or sunshine.

PROMOTING LAYING (T. C.).—We advise no one to try stimulants to make fowls lay. Feed as we have described in the last answer but one.

BUFF COCHINS (F.).—Everything you mention tends to show you have very indifferent birds, faulty in shape, colour, and constitution. You have no right to have "leg-weakness." The best thing you can do is to buy some eggs from a reliable person, and set them under your hens. Rear them for your stock-birds, and kill those you have. Feed properly on natural food, and let them roost in a house with a good, dry, clean, earthen floor. The sooner you set the eggs the better.

ROUFFY FOWLS (R. Bacon).—Try Walton's roup pills, advertised in our columns. There is nothing poisonous imparted to the flesh by the disease.

HATCHING PEA-FOWL'S EGGS (J. P.).—Pea-hen's eggs can be set under a common hen, and she will rear them. They require to be fed like young Pheasants or Turkeys. A large hen will cover four, a middle-sized hen three eggs.

PHEASANTS, BANTAMS, AND PIGEONS (J. W.).—They will do together in an aviary. The Pigeons' nesting-place should be 6 feet from the ground. The cage should be provided with plenty of perches, as in the event of a temporary disagreement they afford an escape.

POULTRY FOOD (Q. E. D.).—We have no experience of the food you mention. Bone dust can be obtained of any dealer in artificial manures.

SPLIT FEATHERS (P. H.).—If by a split feather you mean a broken one draw it out, and in three weeks you will have a new one. Or if you mean a double feather, such as is frequently the centre feather of Fantails' tails, though unsightly, it would scarcely disqualify. You may pluck such a feather out, and it will grow again just the same. We knew a Pouter that had such a one and took a prize. All such feathers are no doubt blemishes, as they ought not to be.

COLOUR OF KITE TUMBLER (P. H.).—A Kite should have no white; if it has it most probably is of an inferior strain, or is bred remotely from a mottled bird.

POINTS OF SHOW ANTWERP (F. S. W.).—The best description known of this bird was given in our number for February 17th, 1870, with an engraving, which number you can obtain free from our office for four postage stamps.

TREE FOR AVIARY (J. B.).—As you do not state the height and other dimensions of the aviary, we cannot advise you.

GERMAN PASTE (A. Snow).—A receipt is on page 154 of our number of last week.

FEEDING HEN CANARIES (R. E. H.).—Feed on hard-boiled egg chopped fine and bread crumbs mixed. Chopping the egg is a tedious process. It saves time, and does the work more thoroughly, to use a small box with a bottom of perforated zinc, through which the egg can be squeezed with the blade of an ordinary dinner knife. Stale bread is best for the purpose, as it can more easily be crumbled by rubbing between the hands or by grating. I always use the crumbs dry, mixing them in about equal proportions, bulk for bulk, while the birds are quite young, and increasing the quantity of crumbs as they grow. Some prefer to soak the bread in water and squeeze it dry before mixing with the egg. While the hen is sitting she will not frequently leave her nest except to take a hasty mouthful of food. If the cock be kept with her he will supply all her requirements; and it is well, especially towards

the close of the period of incubation, to give a supply of the soft food. It is decidedly best to take away the eggs till she has laid the fourth. This is desirable on many accounts. Should she evince a strong desire to commence sitting as soon as she has laid the first egg, and be allowed to do so, the young ones will not all be hatched at the same time, and a difference of a day in the age of newly-hatched birds means this—that the older and stronger will get most food, and the younger and weaker will in all probability die. I know there are many who oppose the removal of the eggs, and who affirm that their young ones are always "chipped" all on the same morning. But it's simply stuff and nonsense. It may be that a hen will occasionally peck on her nest and sit a while, and may be seen doing so perhaps two or three times in the day, and so lead an unthinking observer to suppose she has commenced to sit in earnest; but, as a rule, hens do not begin to sit till they have laid their complement, and it is not desirable for the reason above assigned that they should. The presence of the eggs is an inducement to sit, and for that reason they should be removed. I say nothing of the risk of breakage, which is great, for until a hen commences sitting in earnest she is never done scuffling about in her nest and putting the finishing touches to it, and though her instincts teach her to take care of her egg, she is, nevertheless, liable to prick it with her claw—to "claw-hole" it in the vernacular of the fancy. The Canary sits thirteen days—that is, suppose you give the hen her three eggs on the morning on which she lays her fourth (I put mine in over-night), and that day be, say Saturday, she will chip on the Friday, which is the thirteenth morning following.—W. A. BLACKSTON.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.		IN THE DAY.							
	Baromet- er at Sea level.	Hygrome- ter.	Direction of Wind.	Temp. of Sun at 1 ft.	Shade Tem- perature.		Radiation Temperature		Rain.	
					Max.	Min.	In sun.	On grass		
1873.	Inches.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	In.	
Feb.		Dry.	Wet.							
We. 12	30.949	39.4	36.7	N.	36.4	42.8	21.7	78.3	29.2	—
Th. 13	30.248	35.8	34.2	N.	37.2	43.8	33.6	81.9	30.5	—
Fri. 14	30.291	35.9	35.1	W.	37.6	46.7	33.0	72.2	28.9	—
Sat. 15	30.423	40.5	37.1	N.	38.5	44.5	35.6	68.1	32.2	—
Sun. 16	30.452	37.4	34.8	N.W.	38.6	41.2	36.3	45.2	29.7	—
Mo. 17	30.65	34.8	32.7	N.W.	38.8	36.3	34.1	38.2	23.8	—
Tu. 18	30.799	31.7	30.5	N.E.	37.7	34.0	31.6	34.8	21.6	—
Means	30.411	36.5	34.4		37.8	41.4	33.7	68.8	29.4	—

REMARKS.

12th.—Alternations of eoushine and showers of hail and snow during the day; wind rather high at night. The hail and snow did not yield a measurable amount of water.

13th.—Fine in the morning, and fair all day, at times very sunny; fog in the evening.

14th.—A very fine morning, but dull afterwards.

15th.—A lovely day throughout, at times the sun very bright.

16th.—Fine early, fair all day and pleasant, though there was but little sun.

17th.—Very dark and rather thick, but not foggy, in the morning; fair all day, but dull and cold.

18th.—Again a dark morning, and so continuing all day; dark, dull, and getting colder and colder towards night.

A fair and rainless but by no means bright week; temperature uniform, and pressure extremely high, readings such as that of 18th 30.799 inches occurring but a few times in each century.—G. J. SYMONS.

COVENT GARDEN MARKET.—FEBRUARY 13.

We have no alteration to report.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1 sieve	3 0 to 5 0	Mulberries.....	1 lb.	0 0 to 0 0
Apricots.....	doz.	0 0 0 0	Nectarines.....	doz.	0 0 0 0
Cherries.....	per lb.	0 0 0 0	Oranges.....	100	4 0 10 0
Chestnuts.....	bushel	13 0 20 0	Peaches.....	doz.	0 0 0 0
Currants.....	1 sieve	0 0 0 0	Pears, kitchen.....	doz.	1 0 8 0
Black.....	do.	0 0 0 0	dessert.....	doz.	8 0 13 0
Figs.....	doz.	0 0 0 0	Pine Apples.....	lb.	5 0 8 0
Filberts.....	lb.	1 0 1 6	Pumpkins.....	1 sieve	0 0 0 0
Gins.....	lb.	1 6 2 0	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	0 0 0 0	Raspberries.....	lb.	0 0 0 0
Grapes, hothouse.....	lb.	4 0 10 0	Strawberries.....	1 lb.	0 0 0 0
Lemons.....	100	6 0 10 0	Walnuts.....	bushel	15 0 30 0
Melons.....	each	1 8 3 0	ditto.....	100	2 0 2 9

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	3 0 to 6 0	Mushrooms.....	pottle	1 0 to 2 0
Asparagus.....	100	5 0 10 0	Mustard & Cress.....	punnet	0 2 0 0
Beans, Kidney.....	100	2 0 3 0	Onions.....	1 bushel	2 0 4 0
Broad.....	bushel	0 0 0 0	Pickling.....	quart	0 6 0 0
Beet, Red.....	doz.	1 0 3 0	Parsley per doz. bunches	2	0 5 0
Broccoli.....	bundle	0 9 1 6	Parsnips.....	doz.	0 1 0 0
Cabbage.....	doz.	1 0 1 6	Peas.....	quart	0 0 0 0
Cardoons.....	100	2 0 3 0	Potatoes.....	bushel	4 0 7 0
Carrots.....	bunch	0 6 0 0	Kidney.....	do.	0 0 0 0
Cauliflower.....	doz.	2 0 4 0	Round.....	do.	0 0 0 0
Celery.....	bundle	1 6 2 0	Radishes.....	doz. bunches	1 0 1 0
Coleworts.....	doz. bunches	2 6 4 0	Rhubarb.....	bundle	1 0 2 0
Cucumbers.....	each	2 0 4 0	Salsify.....	1 bundle	1 0 1 0
Endive.....	doz.	0 0 0 0	Savoy.....	doz.	1 0 2 0
Fennel.....	doz.	2 0 3 0	Scorzenera.....	1 bundle	1 0 1 0
Garlic.....	bunch	0 3 0 0	Sea-kale.....	1 basket	1 0 2 0
Horseradish.....	lb.	0 8 0 0	Shallots.....	lb.	0 3 0 0
Herbs.....	bunch	0 3 0 0	Spinach.....	bushel	3 6 5 0
Horseradish.....	bundle	3 0 4 0	Tomatoes.....	doz.	1 0 2 0
Leeks.....	bunch	0 2 0 0	Turnips.....	bunch	0 3 0 0
Lettuce.....	doz	1 0 2 0	Vegetable Marrow.....	doz.	0 0 0 0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	FEB. 27—MARCH 5, 1873.	Average Tempera- ture near London.			Rain in 43 years.	Sun Rises.		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.		m.	h.				
27	TH	John Evelyn died, 1706.	47.7	33.5	40.6	20	51	af 6	35	af 5	34	7	4	6	53
28	F		49.1	32.8	40.9	15	49	6	36	5	51	7	33	7	54
1	S	ST. DAVID.	47.4	33.6	40.5	16	47	6	38	5	8	8	50	8	59
2	SUN	1 SUNDAY IN LENT.	48.7	34.7	41.7	17	44	6	40	5	21	8	23	10	61
3	M		49.9	32.2	41.0	14	42	6	42	5	40	8	45	11	62
4	Tu		49.7	31.5	40.6	11	40	6	44	5	1	9	morn.	5	63
5	W	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	48.9	31.8	40.3	16	38	6	45	5	26	9	4	1	64

From observations taken near London during forty-three years, the average day temperature of the week is 47.3°; and its night temperature 32.9°. The greatest heat was 70°, on the 4th, 1860; and the lowest cold 14°, on the 3rd, 1862. The greatest fall of rain was 0.81 inch.

HERBACEOUS CALCEOLARIA CULTURE.



THE herbaceous Calceolaria presents luxuriance of growth, symmetry, and wealth of colour in a remarkable degree; the bold deep-green foliage, the large clustering heads of flowers, rich yet soft, and extremely varied in colour, render it worthy of the high rank assigned to it among our floral gems. It is generally treated as an annual, and the certainty and convenience of this method of culture cannot be disputed, old plants being

only worth keeping when huge specimens are required for special purposes.

May and June are the best months for sowing the seed, but when it is desirable to prolong the display of flowers, other sowings may follow in July and August, in which case it should not be forgotten that considerable space will be required during winter, especially if it is intended to grow large plants such as may be produced in 8 or 10-inch pots; for then, as the plants gain size, no check must be given to the growth. The plant's few but most important demands for more space for its roots, and for the play of light and air around and among its leaves, must be promptly attended to. When this condition is well looked to the plants make an ample return for every care, by rapidity of growth and the rude vigour with which they flourish. The shifting into larger pots may continue till the flower-stems begin to grow, and even after that period, if pinching is practised, as is frequently the case when the aim is to produce plants of an extra size.

The one cultural point of vital importance is to promote the quick yet vigorous growth in the very earliest stages, which is natural to this plant. For this reason I prefer for the seed-pan a compost of old, rich, rotten manure, finely sifted and mixed with an equal quantity of sand, keeping it quite an inch below the top of the pan, sowing the seed on it, and then pressing down gently with a circular piece of wood. A careful damping with water out of a fine rose is then given, and a sheet of glass placed on the pan, which is taken to a cool house or pit where it can have abundance of light without being fully exposed the full rays of the sun. So treated the seed vegetates quickly, and the seedlings springing up full of sturdy vigour, are first potted singly in similar soil, and afterwards into a rough rich mixture of manure, turfy loam, sand, and charcoal. No sifting and very little chopping are required in preparing this compost, in which the roots spread with such surprising rapidity that the plantsman has to be on the alert in the shifting into larger pots; for the roots must not be suffered to fasten on the sides of any pot but that in which the plant is to mature its growth and produce its flowers. To the practised hand the reason for this is obvious enough, but it may be well to point out to the beginner that when a plant becomes potbound its growth receives a check, often a very necessary one to induce free-flowering, but which is fatal for the time to additional size if such be required.

Avoid the use of peat in the culture of this plant. I do not, of course, mean to infer that it will not grow in peat, but a rich coarse soil, such as I have described, is so admirably adapted to its wants as to be altogether preferable. The use of peat in the seed-pan is what I most object to, from its propensity to become dry, and the indifferent nourishment it gives to the rootlets of the seedlings.

A glance at a healthy Calceolaria in any stage of growth is sufficient to convince one that it is a gross feeder. Let this but be fully recognised, and be acted upon by affording it abundance of rich soil and stimulants, keeping the plants clean—free from aphides and thrips—and with plenty of air and light on all sides, a full measure of success will be the result. The assistance of stimulants, by which I mean liquid manure, is not required till the flower-stems appear, when their frequent use is of the greatest value and importance, imparting continued health to the growth, and to the flowers such size, form, and colour as would be quite wanting were liquid manure withheld; it being evident that as the soil of any gross-feeding pot-plant is permeated with roots, so surely does it gradually become exhausted. Proof of this is afforded by the decaying or unhealthy foliage, and the short duration of the puny growth of flowers.—EDWARD LUCKHURST.

EUPHORBIA JACQUINIEFOLIA CULTURE.

THIS Mexican evergreen shrub was introduced about the year 1836. It is one of those plants which should be grown by everyone who has a stove, being of easy culture, and the flowers, though small, are very beautiful.

With a little care it can be made to produce two successions of flowers from November to March. Good-sized plants can be grown in moderately-small pots with from ten to twenty flowering shoots on each, and if kept near the glass they will not require any stakes. Cuttings of the small young shoots taken off in March will root freely in a Melon or Cucumber frame; when rooted they should be potted-off singly into small pots, and kept near the glass till they become well established. If all go well, by May they will form nice healthy young plants, and by that time they may be hardened-off, and then grown on all summer in a cold frame, taking care to shut-up early, so as to secure a little sun heat, which they delight in. To form neat bushy plants they require to be well pinched-back all summer, but they must not be pinched after August if early flowering is desired. By September they should be removed to a shelf in the stove, and kept close to the glass, so as to thoroughly ripen the wood, as on this depends the proper succession of flowers throughout the winter.

The plant is all the better of being rather stinted as to pot-room, and should be only moderately supplied with water; at the same time care must be taken not to allow the soil to become dust dry, neither must it get sodden with moisture.

The first crop of flowers will generally appear in November, and if the plants be removed to a conservatory or intermediate house they will continue in perfection for

several weeks. Care must be taken not to over-water while the plants are in a low temperature.

After the first crop of flowers is over, remove the plants to the stove again, and give them a warm corner near the glass with as much light as possible. In a few weeks every joint will show flower again and continue flowering for weeks, if the plants are never allowed to become dry or to be exposed to a very low temperature.

The soil I use is peat, turfy loam, silver sand, and a little charcoal. I know of no plant that will better repay a little attention.—J. SMITH, *Exton Park, Rutland*.

VINE FORCING.

On looking over my garden note-book for the years 1854 to 1857 inclusive, I find the following practical notes relative to the system of forcing the Grape Vine carried out at the place at which I then lived as under gardener. I have extracted them and put them into a readable form, thinking probably some one or more young beginners may think them worth their consideration. My notes apply to inside treatment only, except in one or two items, and the roots of the Vines were outside in good well-protected borders. I may state that before I became head gardener I served under several gardeners whose methods of Vine-forcing varied considerably, but I could not select one more to my mind than that which I shall describe, and which I have practised ever since with some slight deviations.

1. Supposing the Vines to be pruned, dressed, and tied in their proper position, proceed to thoroughly cleanse the house by whitewashing, so as to make it perfectly healthy; and if there is a pit in it, fill it with leaves or any other material most convenient for affording a gentle heat to assist the Vines to break, and also for the convenience of propagating under hand-lights if required.

2. If Grapes are required for table, say at the end of May or beginning of June, take into consideration the strength of the Vines and the previous treatment to which they have been subjected, as well as the conveniences for the application of artificial heat, &c. Shut the house up by the first week of December, keeping as nearly as possible a temperature of 45° by fire heat, allowing the heat from the sun to raise the atmosphere of the house to 55°, and keep it at that point by ventilation. Syringe the Vines and the walls of the house thrice a-day, but allow the Vines to become dry once in twenty-four hours. Steam the house occasionally by syringing the pipes.

3. As soon as the buds begin to swell raise the temperature to 50° by fire heat at night, and not more than 55° in the day without sun, but advance another 5° by sun heat from the last stage. Keep the temperature as near these points as possible, still syringing and steaming as before, but allow the Vines to become dry once in twenty-four hours.

4. As soon as the buds begin to burst raise the temperature another 5° by fire heat, and by sun heat another 5°, from the last stage, still syringing and steaming as before; but as the season advances, with more light and sun, as well as more fire heat, perhaps a somewhat greater amount of moisture in the house will be necessary. This addition at the present stage must be entirely guided by the weather and the state of the house inside.

5. When the majority of the buds put forth their small leaves, raise the temperature to 60° by fire heat and 70° by sun heat. Guard systematically against any fluctuation of temperature at this stage, as it will tend to make the shoots weakly. A little dis-budding may now be done if there be need of it; and if the weather should prove sunny, syringing four times a-day will not be too much, and the precaution of allowing the Vines to dry themselves every twenty-four hours will now be less needful through the increase of heat and light. However, it is partially necessary to guard against their becoming dry too long or too often. Steam at every opportunity.

6. As soon as the shoots put forth their bunches clear from the stem, raise the heat another 5°, or to 65° by fire and 75° by sun heat, keeping the temperature as regular as possible, still syringing and steaming as necessary.

7. Gradually raise the temperature from 65° to 70° as the Vines advance into bloom. By this I mean to advance 2° at a time, so as to reach 70° by the time the first bunch is in bloom; and while in bloom 72° will not be too much. Keep the temperature very regular all through this stage, discontinue syringing while in bloom, and keep the house dry. The temperature by sun heat may be from 80° to 85° with a little ven-

tilation. At this time a good watering is given to the border outside.

8. Keep the temperature up as for last stage; in fact, from the time the berries are set till they commence to colour the temperature may be the same, but discontinue syringing the Vines. However, keep the walls and floor of the house moist, or red spider will make its appearance. The border was again well watered when the first bunch commenced colouring.

9. This is the ripening stage, and as the Grapes advance into colouring more air may be given, and if the temperature fall in consequence it will be rather an advantage so long as it is never allowed to get too low, nor fluctuate either way in a sudden manner. When the Grapes are about half-coloured leave a little top air on at night if the weather is suitable, and in the last week or two of their ripening a little front air as well, sufficient to promote a circulation through the house. Discontinue fire heat as soon as the weather is warm enough to maintain the temperature required.

The above system applies to Black Hamburgh and other early and easily-forced Grapes, but for Muscats and similar sorts a few degrees more heat will not be far wrong. Ventilation should be given early, and the house closed early. It is much the best practice to give air little and often; and at closing time, if the lights are far open, do not shut the house up all at once, but by parts at a time, at intervals of a quarter of an hour. The syringing should be done first early in the morning, again at closing time, again at dusk, and, if more is required, at ten o'clock. I need hardly mention the necessity of early attention being paid to tying down and stopping the shoots as such work suggests itself to the gardener. Thinning the berries should be practised as soon as they are large enough to be seen plainly, and good judgment in the operation is absolutely necessary.

The above notes are the same as taken from my garden note-book; and the only deviations I make from the rules then laid down are, first, I do not practise steaming the pipes after there are leaves on the Vines (I have seen injury arise from its being done when the pipes are too hot, and I consider evaporating pans on the pipes much better); and secondly, in the seventh stage, when it is advised to keep the house dry; I do not now do so. Although I hold with discontinuing to syringe the Vines, I make it a practice to damp the walls and floor of the house. However, this must to a great extent be regulated by the weather. Too much damp will stop the circulation of the pollen, which to bad-setting Grapes is at once a disadvantage. On the other hand, at the blooming stage, when the artificial heat is strong, the absence of moisture is sure to bring on an attack of red spider, which the foliage seldom gets the better of.—THOMAS RECORD.

ELECTION OF ROSES—LA FRANCE.

A ROSARIAN of only six years' standing, although one who has not failed to win his spurs in local tournaments, I certainly should not presume to enter an appeal against the judgment of acknowledged authorities like Mr. Cant and Mr. Radclyffe, did not my very great admiration of La France prompt me to offer a word or two in its defence. Of this Rose Mr. Cant says—"The petals are flimsy. It is often washy and dirty, it is not to be compared with Baroness Rothschild, and the colour being somewhat similar I would never place it in the first twelve." Lovers of La France, what say ye to the indictment, guilty or not guilty? I suppose the warmest advocates of this beautiful Rose will, at once, admit that there is some truth in Mr. Cant's first accusation. The petals are just a little, no, not flimsy, but say they are not quite stout enough. Admitting this "soft impeachment," I aver La France to be in all other respects as near perfection as may be. In colour, form, and scent, it is far superior to Baroness Rothschild. The beautifully recurved petals resemble those of that fine Rose, which when caught at its best is a "thing of beauty"—Prince Camille de Rohan; but La France is more globular, and infinitely more beautiful in shape than the Prince.

Mr. Radclyffe says, La France is a bad foul weather Rose, but with me it does not suffer in this matter more than other light Roses, such as Miss Ingram, Souvenir de la Malmaison, and "old Glory." Mr. Radclyffe complains that it does not bloom well with him, and surmises that his place may be too cold and bleak. Against this supposition permit me to say my garden is in the "wolds" of North Yorkshire, nine miles distant from the sea coast, about 500 feet above the sea level, and surrounded by undrained moorland. East winds, or, as they

are sometimes here termed "custard winds," prevail in the spring and early summer months with such unvarying persistency, that the Rev. C. Kingsley, were he compelled to live here would perhaps find out that it is possible to have too much of even so good a thing as an east wind. Well, in this situation *La France* blooms profusely. From a small tree on the Briar, its second year of blooming, I cut last summer more than twenty good blooms. With the exception of *Général Jacqueminot* I grow all the fifty *Roses* which received the greatest number of votes at the recent election. If in this good company, during the last *Rose* season, there had been a contest for the premier *Rose*, and if those friends who came to look had been asked to vote (with woman's suffrage of course), *La France* would unquestionably have been at the head of the poll.

My experience of "old *Glory*" is precisely the same as that of Mr. Cant and Mr. Radclyffe. I have many plants of this *Rose*—as everybody has—beautiful in bud, delicious in scent, but scarcely ever producing a perfect bloom. Marie Baumann will not grow with me, and Céline Forestier is as worthless here as Mr. Eyre says it is with him. *Marché Niel* grows well on its own roots, on the *Manetti*, and on the *Briar*. I get plenty of wood, and every year I look anxiously for the blooms which come not. —W. STONEHOUSE, Darnholme, Goathland, York.

EXOTIC AND HARDY CYCLAMEN CULTURE.

I FULLY coincide in what your able correspondent Mr. Douglas has written in favour of this plant for winter decorative purposes, and also in the mode of cultivation he adopts. I can only add one or two remarks with a view to render the latter still more easy.

Like Mr. Douglas, I sow the seed as early in the spring as possible, say February, and plunge the pot or pan in bottom heat, if such can be afforded. As soon as the plants are fit to handle they are pricked-out into boxes, such as are used for *Geranium* cuttings. These boxes are 2 feet long, by 1 foot wide, and 3 inches deep, and I prefer separate pots as requiring less space; for every inch of heated structure is full to overflowing, and a box is more quickly moved from place to place than a number of small pots. In boxes the seedlings remain till they are large enough to pot, or, rather, large enough to be transferred to 3 or 4-inch pots, by which time there will most likely be more room in the heated compartment they have been occupying. In fact, like Mr. Douglas I keep them very often the whole summer in the *Pine* stove until they begin to show flower, when I find it is not always advisable to remove them to a house too cool, for with such treatment I have known some of them die-off. A sort of intermediate house is best for the young plants, but older ones that have not been kept in the forcing house during the summer will endure as much cold as *Cape Heaths* and similar plants.

When the flowering is over in spring my treatment is even more simple than that of Mr. Douglas, for I usually turn all the plants out of their pots, and plant them in a cold pit in which *Calceolarias* have been wintered, the soil being sandy rather than otherwise. The corms are but slightly covered with this, but I coat the ground as deeply as the remaining leaves of the plants will allow with decayed leaf mould, and take notice during the summer that there is always sufficient to just cover the corm, which I think ought never to be exposed. Beyond this no further notice is taken of them till the middle or end of September, when they are lifted and potted, the autumn growth having just begun about that time. By this system no care nor attention in watering is required, beyond giving them a good watering with liquid manure some wet day during the summer, although the bed they are growing in is exposed to the full sun. I am not acquainted with any plant which can be more readily taken up than the *Cyclamen*.

With regard to the species which are named in catalogues, might I ask those who are authorities in such matters if the bulk of those in ordinary cultivation do not run into each other in such a way as to render botanical classification impossible? For many years I have looked upon the hardy autumn-flowering *Cyclamen*, that often presents a mass of bloom without a vestige of foliage, as being a distinct species, but now it seems linked by imperceptible degrees to the rounder-foliaged class to which the name *C. persicum* is given. Assuredly the botanical distinctions are not persistent in the two, or there are great departures from them in the mass of

varieties cultivated both in-doors and out. The out-door *Cyclamens* are not met with half so often as they deserve to be, and but rarely in fashionable gardens; while in some cottager's little flower border, nestling perhaps at the root of a Pear or other fruit tree, one may be met with that has occupied the same spot for a dozen years or more, and that, when in bloom at the end of harvest time, presents a mass of floral beauty which it is vain to look for in the best pot cultivation. The truth of the matter is, the plant does not like rude removals. May I ask if the *Cyclamen* which was found wild in divers places is now met with? I expect it is becoming more and more scarce; but as other kinds are now plentiful, may I ask if any of your correspondents have been successful with their out-door culture? As I cannot but think some favoured spots might be found where many of those that now grace the shelves of our greenhouses would survive the winter, and add as much beauty to spring gardening as the *Primrose*. At the same time I hardly expect they will bear the same amount of shifting from place to place, but if planted in some cosy corner they might cheer us with their interesting blooms each returning season.

Mr. Douglas mentions the liability of this plant to be attacked with mealy bug. I may also mention another enemy in the shape of a rather large grub that attacks the corm on the under side, eating large portions of it, and so divesting it of its rootlets; the foliage languishes in consequence, the roots, in fact, being all gone, so that the plant has no hold of the soil. I have lost several plants during the past winter from this cause, and have tried some experiments with a view to find a means of preventing the attacks of this unexpected intruder, but I find it more tenacious of life than might be expected. A tolerably strong mixture of soft soap and water takes no effect upon it, and the same may be said of tobacco. Perhaps some other growers have met with it also; if not, I may say that the grub is nearly as large as that which becomes the wasp, but is an active creature, burrowing into the soil, and eating away at the root. Is it generally known, and what is the best means to check it?

I have not been very successful in multiplying the hardy *Cyclamens*, perhaps inattention at the right time may have been the cause; although the tender kinds may be counted by hundreds, nurseries will do for the hardy ones, and what I have seen are scarcely less pretty. An easy and expeditious mode of propagating them would be acceptable, more especially one insuring the germination of the seed, which in my case is not so easily accomplished as with the exotic kind.—J. ROBSON.

YUCCAS FRUITING IN EUROPE.

I AM not a little surprised to see an article going the round of the horticultural and other journals as to the non-fertilisation of *Yuccas* in Europe. Have we the *Pronuba Yuccasella*, or are its services not required, or can it be another insect serving the same purpose? for *Yuccas* have seeded abundantly in this neighbourhood (Cannes) for the past ten years without any artificial fertilisation whatever.

I should like under the same heading to correct an error of your correspondent "C. W. H." (see No. 587), when at Nice, last year, in supposing there was but one male *Date Palm* in its neighbourhood. By far the greater majority are males, which are very visible to passers-by knowing the two sexes. —GEO. WORTHAM, Gardener, Villa Victoria, Cannes.

RHAMNUS FRANGULA.

PROCURE plants of this of Messrs. F. & A. Dickson & Sons, 106, Eastgate Street, Chester. Unless the Alder Buckthorn grow better with others than it does with me in light but good soil in which most shrubs succeed well, I fear it will take very many years and a considerable extent of ground to give a ton of twigs worth from £10 to £14 for charcoal for gunpowder manufacture. It is a good subject for withstanding the sea breeze, and will succeed in an exposed situation.—NORTH YORK.

I HAVE seen *Rhamnus Frangula* in some of the nurserymen's lists—Mr. William Paul's for one. From this shrub the finest description of charcoal is made in very large quantities at the Government powder works, Waltham Abbey. It is there improperly called Dogwood charcoal, the real Dogwood being *Cornus sanguinea*, which is useless for charcoal. Gunpowder manufacturers are almost, if not entirely, dependent on this (erroneously called Dogwood) material for their charcoal, and

if it could be grown in this country in large quantities its cultivation should prove remunerative. This shrub is well adapted for fox and game covers; the thinnings could be sold annually for charcoal at from £10 to £12 per ton. It will not thrive in a stiff soil. The Great Eastern Railway Company have tried to cultivate it on the margins or slopes of their line, but without success. I hope, however, that your readers may have better fortune should they determine to try it.—J. C. H.

CHOICE GREENHOUSE RHODODENDRONS.

No. 1.

Who grows them? Who knows them? Who cares for them? To all these questions I fear the answer must be, Very few, either gardeners or amateurs, care much for them; by this I mean comparatively few, for I think I may say, without fear of contradiction, that, taking the number of plant-growers into consideration, those who cultivate the greenhouse Rhododendrons are few; still, I am persuaded this apathy arises more from a want of knowledge respecting them than from a disregard of their beauties. It has, therefore, occurred to me that the present time is very opportune to say a few words on the subject, with the view of promoting the culture of these really grand and beautiful plants, and of enlisting the attention of amateurs especially.

Very few species were known until they were discovered by the present Director of Kew, Dr. J. D. Hooker, in his celebrated explorations of the mountains of Sikkim Himalaya. During that arduous journey he met with upwards of forty species of Rhododendrons. I cannot say the exact number, speaking from memory, but thirty of these, I believe, were new to science. Upon his return to this country Dr. Hooker brought with him not only sufficient specimens for the use of the scientific botanist, but also an abundance of living seeds; indeed, the very abundance, combined with the fact that few amateurs knew anything of them, was, in my opinion, one of the great causes of their neglect from the first. People reasoned that if they were any good they would not have been so plentiful, and so when they might have been procured at a small rate by anyone, no one bought them; some, however, who heard of their charms were induced to grow them until they flowered, and those persons were well rewarded for their trouble.

After Dr. Hooker's journey in Sikkim, the mountains of Bhootan were explored by Mr. Booth, who added several fresh species to their number. These have been augmented by collectors from various other parts of India, and together with the hybrids obtained from them at home, afford ample scope for the taste of the amateur, whether as regards colour of flowers or habit of growth. The majority of these plants require but trifling protection; indeed, if properly planted and protected by adjacent shrubs, there is no doubt many of them would form handsome specimens in the open air in various parts of the country. I am aware this has been advocated and tried before the present time, but I do not think all has been done by planters which the importance of the subject demands. One of their great faults for open-air culture is that the Sikkim kinds begin to grow so very early that the young and tender shoots get killed by our late spring frosts; but it is a moot case, if protecting their buds through autumn and winter from the sun's influence for two or three years would not acclimatise them somewhat, and cause them to start into growth later in the season. Should this attention, however, not have so much effect, it would certainly retard them considerably. A few years ago I saw several collections planted in the open air, and I should be glad to hear how they may be succeeding. We are told that "the species of this genus are most numerous, and the flowers attain their greatest size and brilliancy of colouring on the high mountains of East Nepal and the Sikkim Himalaya, at an elevation of from 10,000 to 14,000 feet. The forests in these regions reach an altitude of about 12,000 feet, and above these the Rhododendrons comprise fully three-fourths of the vegetation, where they not only display their beauties to the greatest advantage, but supply the aborigines with wood for the manufacture of numerous domestic utensils." The mountains of the Malayan Archipelago and British Burmah have also yielded up several beautiful species to our home collections; but these have not proved so hardy as the kinds introduced from either Bhootan or Sikkim, but, nevertheless, they are magnificent additions to our greenhouses and conservatories. In addition to the introduced species, several lovers of these plants have devoted

themselves to the hybridisation and cross-breeding of the various kinds, and have thus brought into existence a number of kinds which your amateur readers would find invaluable for conservatory or greenhouse decoration if they would only make themselves acquainted with them; indeed, several of the hybrids will bloom twice in the season if properly cared for, and that, too, while the plants are quite young.

Rhododendrons thrive best in good, rough, fibrous, sandy peat, and the drainage should be ample, and kept in good working order. The hardy kinds, when planted in the open air, will succeed well in a mixture of peat and light loam if the drainage is good; indeed, they will even grow without the peat, but I think not so well as with a little of it, although I would not by any means associate myself with those who assert that Rhododendrons must have peat, because I have seen so many proofs to the contrary; yet for pot culture, or when planted in the border of a conservatory, I should certainly prefer good fibrous peat, with just a small quantity of sandy loam. It must also be borne in mind that, although Rhododendrons like peat soil, they are not bog plants, and that to ensure their well-being the drainage must be good and free from obstructions. These plants may be reckoned amongst the best and most ornamental of permanent conservatory plants, and when grown with Camellias they serve to prolong the gay season, as they usually come into bloom just after the last-named plants have cast their flowers. The large-growing kinds should be planted in the beds or borders of the conservatory or greenhouse, whilst the smaller-growing kinds will be found superb ornaments for the side or front stages. They are very easily grown, last a long time in full beauty, and most of them are to be procured at a reasonable price.

Having now made out my case in their favour, I purpose briefly enumerating some of the best both of the introduced species and the hybrid kinds produced in our own gardens, any of which will be found well deserving the attention of even those with very limited space; whilst those who can find room to grow them all will have quite a galaxy of beauty, and that, too, of a *rêcherché* character.

R. HOOKERII.—I place this at the head of the list because the name of that indefatigable traveller and collector, Dr. Hooker, always seems to me so inseparable from these plants, although this species was none of his finding. It was discovered by Mr. Booth in the mountains of Bhootan, growing at from 8 to 9000 feet altitude, in company with *Pinus excelsa*, and during the winter months, which correspond with our own, the frost and snow are both severe and lasting. *Pinus excelsa* is hardy with us, and there is no reason why the plant now under consideration should not prove equally tractable. Naturally, it grows upwards of 12 feet in height, but it flowers when quite young. The leaves are about 4 inches long, and upwards of an inch broad, oblong in shape, thick and coriaceous in texture, dark green on the upper side, but glaucous below. The flowers are large, numerous, and in colour rich crimson. It blooms in April and May.

R. EDGORTHII.—This is a fine, free-flowering, and comparatively small-growing species. In its native country it grows upon or in the forks of forest trees, as well as upon the ground or in the crevices of rocks. The leaves are upwards of 3 inches long, somewhat ovate-lanceolate in shape, tapering to a slender point, deep heavy green on the upper side, whilst every other part of the plant is densely clothed with a bright ferruginous down. The flowers are large, deliciously sweet, pure white, delicately tinged with rose. It blooms early in May, and is tolerably hardy. Native of Sikkim at some 9000 feet elevation.

R. VEITCHIANUM.—A very fine species, but scarcely so hardy as the preceding. It forms a medium-sized branching shrub, the leaves being coriaceous in texture, obovate, acute, upwards of 3 inches long, smooth, dark green on the upper side but glaucous below. The flowers are snow white, with a delicately crisp margin; they are upwards of 4 inches across, and produced in great profusion at the end of April and in May. Native of Mouhmein.

R. VEITCHIANUM LÆVIGATUM.—This is a variety of the previously named plant, and a native of the same country. It differs from the species only in having plain instead of crisp margins to the petals of the corolla. Both forms are very desirable.

R. BROOKEANUM.—In this plant we have a lovely ornament. The foliage is large, measuring 6 or 8 inches in length, coriaceous in texture, oblong-lanceolate in shape, and dark green on the upper side, but paler below. The flowers are large,

produced in many-flowered umbels, and thick in texture, whilst the colour is rich golden orange. Naturally it is epiphytal upon high forest trees, but it succeeds well in our greenhouses under pot culture. It blooms during April and May. Native of Borneo.

R. BROCKEANUM GRACILE.—A variety of the above, of graceful habit, and a profuse bloomer. The foliage differs in being somewhat smaller and light green above, whilst the large blooms are pale yellow, and not deep orange as those of the species. It blooms about the same time, and is also a native of the Bornean Mountains.

R. BROCKEANUM FLAVUM.—This variety requires the warmest corner of the greenhouse, so perhaps is not found growing naturally at such great elevations. The plant resembles the species in habit of growth, but the large leaves have a very glossy and polished appearance. It produces its large umbels of soft pure yellow flowers during April and May in the greatest profusion. Native of Borneo.

R. CILIATUM.—We now come to an extremely beautiful small-growing species, and one that will stand our winters with impunity; but when grown in pots it may be brought into flower about the beginning of March with the greatest ease. It is dwarf and compact in habit, and blooms most profusely. The leaves are obovate and bright green on the upper side, glaucous beneath, and having the edges clothed with short stiff hairs. The flowers are large for the size of the plant, varying from pure white to deep rose in colour. It is a most desirable species. Native of Sikkim, at some 9 to 10,000 feet elevation.

R. JASMINIFLORUM.—An exquisite little species, which frequently blooms twice during the year. The foliage is somewhat small; leaves obovate or inclined to oblong, coriaceous in texture, smooth, and dark green. The umbels of bloom are many-flowered; blooms tubular with a spreading limb, pure white, and deliciously fragrant. Although a native of Malacca, it thrives well in the warm end of a greenhouse or conservatory.

R. DALHOUSIANUM.—This is truly a grand and noble species, assuming under cultivation more gigantic proportions, it would seem, than in a state of nature. We are told that this plant is a slender straggling shrub 6 to 8 feet high, with oblong leaves, and white, bell-shaped, fragrant flowers delicately tinged with rose, and that it generally grows on the limbs of the large forest trees, in regions of fog and moisture, at some 9000 feet altitude, and within sight of the snow-capped peaks of the Himalayas. With us it assumes the proportions of a noble erect tree, producing its enormous sweet-scented flowers during the early spring months. They measure upwards of 4 inches across the mouth, with a tube of about the same length; they are fleshy, pure white, slightly tinged with rose, and very sweet-scented.

R. AUCLANDII.—A fine bold-growing species, and somewhat rare in cultivation. The leaves are leathery in texture, oblong, with a rounded base and acute point, some 8 or 9 inches long, bright dark green on the upper side, glaucous below. The flowers are produced in May and June; they are pure white, and nearly as large as those of *R. Dalhousianum*. By some this is considered the handsomest of its family: at any rate, it may safely be reckoned amongst the most beautiful kinds from Sikkim-Himalaya.

R. THIBAUDIODES.—This species at first sight would not appear to have any affinity with the two previously described plants. It is, nevertheless, a true *Rhododendron*, and an extremely handsome one too. It is a small-growing plant, producing its terminal umbels of blooms in the spring and early summer. The flowers are tubular, with a slightly spreading limb, the tube being bright waxy red and the limb greenish yellow. It is a native of Bhotan.

R. FRAGRANTISSIMUM.—One of the beautiful plants which have been raised in this country. It is the offspring of seeds produced by crossing *R. Gibsonii* with *R. Edgworthii*. It is of a compact and shrubby habit, forming a beautiful specimen under pot culture, and an abundant bloomer. The flowers are large and fleshy, measuring about 5 inches in diameter. They are pure snow-white, slightly spotted on the upper segments, and tinged with rose upon the back of the petals, added to which they are deliciously fragrant, as its name implies.

R. PRINCESS ALEXANDRA.—This is also a garden hybrid belonging to the *R. jasminiflorum* type. It is a charming pot plant, being dwarf and compact in growth, and a profuse bloomer. The flowers are tubular, pure white, with rosy pink stamens.

R. PRINCESS HELENA, the result of a cross between the

former variety and *R. jasminiflorum*, is an exquisitely beautiful plant, well deserving a place in every amateur's greenhouse. The flowers are long and tubular, whilst the colour is soft pink or flesh streaked with rose; they are produced during the spring months in great abundance.—EXPERTO CREDE.

ROYAL HORTICULTURAL SOCIETY.

THE resolution of the Council of the Royal Horticultural Society to vacate their office consequent on the non-adoption of their Report at the adjourned meeting held last Tuesday se'night is inoperative. The Council as a body cannot resign according to the spirit of the Charter; and if any individual members should take that course, their places must be filled by the existing Council without consent of the Fellows, leaving the election to be confirmed at the next annual meeting in February, 1874.

This being the case, the Council remain *in statu quo*, unless some members, feeling personally aggrieved at the action that has been taken by the Society in rejecting the Report, choose to act in their individual capacity, and place their resignation in the hands of the Council. This would give an opportunity for an infusion of new blood, and probably the present uncomfortable state of affairs may be got over. It would be no difficult matter, provided obstacles were not put in the way, to construct a Council which would be acceptable to every interest represented in the Society; but the question which the Council will have to face, be it composed of whomsoever it may, is, What next?

It is a notorious fact that, with the exception of two years during the period in which the Society has been bound up with the Royal Commissioners, the expenditure has considerably exceeded the income, and that, too, in face of the fact that there were men on the Council during that period who were accustomed to large financial transactions, and to the control of expenditure in great undertakings; yet, notwithstanding the vigilance which, we presume, these gentlemen gave in virtue of their office to the financial state of the Society, the result was in many instances greatly to the disadvantage of the Society. There must, therefore, we presume, be something in the present relations of the Society which even diligent oversight and skilful management cannot accomplish for its benefit. Notwithstanding the taunts of dishonesty which have been thrown by the Royal Commissioners at the Society for not paying the sum of £2400 annually as rent, we hold to the belief that the Society has honourably fulfilled every engagement it has ever made with the Commissioners. If there is any ambiguity in the clauses of the first agreement with the Commissioners, there is none in the Charter, and the date of the latter being a year subsequent to the former, the Charter may fairly be taken to be the interpreter of whatever may be doubtful in the agreement. Seeing, then, that the Society are bound by the Charter to pay to the Commissioners the sum of £2400 every five years instead of annually, it has been found by experience that even this is too heavy a burden for it after paying necessary expenditure and interest on debenture debt. To obviate and to meet this state of things, the Council recently entered into negotiations with the Commissioners of the annual Exhibitions now being held at South Kensington to give and receive mutual advantages which it was thought would put the Society in funds to enable it to meet all its liabilities. The propositions for this object we have already laid before our readers (page 134), but they were rejected by the annual Meeting held on the 11th inst. An amended form of these propositions (see page 156) was submitted by the Council to the Commissioners, which that body rejected, and the attempt to improve the finances of the Society failed, a large and influential number of Fellows resident in the neighbourhood of the South Kensington Garden disapproving of the terms of agreement with the Exhibition authorities. So strong is the feeling against these propositions, that an eminent Chancery barrister has been consulted on their legality, and he has given the following opinion:—

"I have perused the accompanying Charter of the above-mentioned Society, and the Bye-Laws made in pursuance of its provisions, and also the agreement proposed to be entered into between the Society and Her Majesty's Commissioners. It appears that the Society was incorporated for the purpose for which the Horticultural Society of London was incorporated by letters patent of the 17th April, in the 49 Geo. 3rd, and to carry into effect the recited agreements with the Commissioners. A copy of those letters patent is not before me, but it would seem from a recital in the Charter that that Society was incorporated

"for the purpose of the improvement of horticulture in all its branches, ornamental as well as useful," and I assume that they contain nothing which can affect the present question.

"By the fifteenth clause of the existing Charter the Council are authorised to make and establish such Bye-Laws as they shall deem useful and necessary for the regulation of the Society, and of the estate, goods, and business thereof, and for carrying into effect the arrangement between the Commissioners and the former Society, and the recited agreements and the affairs in general of the Society, and all matters and things in any wise relating thereto; to vary, alter, or revoke such Bye-laws, and make others as they shall think most useful and expedient, so that the same be not repugnant to the now stating Charter or laws of the realm. And Clause 16 requires all Bye-Laws to be adopted and confirmed at a General Meeting of the Fellows at large of the Society, and provides that in the case of open voting the majority shall bind the minority, but that in case of a ballot (which any five Fellows may demand), the Bye-Laws, to be binding, must be adopted and confirmed by two-thirds of the Fellows voting.

"These powers are very large, but I am of opinion that they do not enable the Council, even with the authority of a majority of Fellows at a General Meeting, to enter into or carry into effect the proposed agreement with the Commissioners. They may, doubtless, alter the existing Bye-Laws and make such other regulations as to the admission of visitors to the Gardens as they think fit, but they cannot lawfully pay or apply any of the funds of the Society to any purposes other than those for which the Society was incorporated. They are forbidden to do this by the seventeenth of the existing Bye-Laws, but if that Bye-Law were to be repealed they would remain under the same disability.

"I am also of opinion that the Council cannot delegate any of their powers to the Commissioners, or to any other body; but this they would do if they were to agree not to alter the annual subscription to the Society without the consent of the Commissioners, or if they were to agree not to accept any more life members except by agreement with the Commissioners, and to bind the Society to the proposed arrangements during the whole term of the Society's lease unless the Exhibition cease.

"I am of opinion, therefore, that Clauses 3, 4, 6, 10, and 11 of the proposed agreement are beyond the powers of the Council even if they obtain the assent thereto of a majority of Fellows at a General Meeting, and that upon a bill filed on behalf of the Fellows and Debenture Holders, the Court of Chancery would restrain the Council and the Society from entering into or acting upon any such agreement.

"WILLIAM SPEED, *Lincoln's Inn.*

"19th February, 1873."

Supposing that the amended propositions had been adopted there is every reason to believe that the Society would have made a good financial bargain with the Royal Commissioners. But this arrangement was limited to the continuance of these much-abused annual International Exhibitions, and as the general belief is that these cannot endure, or will not be endured much longer, the prop the Society would receive would not be long-lasting.

We repeat, of whomsoever the new Council is composed, it will have to face the question, What next? Any arrangement it may make with the Royal Commissioners must be of a temporary character, for apart from the failure of the annual Exhibitions, our conviction is, that the Commission itself will ere long cease to exist. The Society will have to seek a home some day, and the sooner this is set about the better.

After having devoted great attention to the relations subsisting between the Society and the Royal Commissioners, and seeing the small benefits that have resulted to the Society by such a connection, we have long been impressed with the conviction that the only safety for the Society is to sever the bond and again become independent. There need be no obstacle in the way of such a severance. We believe the Royal Commissioners feel as much hampered by their connection with the Society as the latter does with them; and if the two parties would consent to part company, the Society going back to the old homestead at Chiswick and leaving the Royal Commissioners to deal with South Kensington as seems best to them, an arrangement might be made on such a basis as the following, and which would be equitable for both parties—

To cancel all agreements existing between the Commissioners and the Society.

In consideration of the enormous expenditure of upwards of £70,000 which the Society has made on the Commissioners' estate at South Kensington, the Commissioners to take the whole of the Society's debenture debt, for the half of which it is already responsible.

The Society to give up all connection with the South Kensington garden and return to Chiswick.

The Commissioners to take possession of South Kensington garden, and to grant to the Society accommodation and space for holding its meetings and horticultural shows therein on terms that may be mutually agreed upon.

In this way the interests of the two bodies would be perfectly distinct, and each might aid the other by united and harmonious action, instead of, as at present, prolonging a discord which is both injurious and undignified.

Now that matters have reached their climax, it will be well that all who have any interest in the future welfare of the Society should act cautiously and with moderation, and on no point should they be more careful than in the selection of those who are to form the Council. Men ought to be put upon it who have not only the desire of benefiting horticulture, but who are above all clique influences and who have time to attend to its deliberations. I do not think Mr. Peach showed his wisdom in selecting, as he did, Mr. Hole as one of his nominees. Everyone who knows him admires his geniality and kindness of heart, and as a Rose-grower and writer he is well known; but he lives at Newark, and it would not be fair either to him or the Society that he should be expected to attend what must be now the very frequent meetings of the Council. Mr. Hole was placed on the Floral Committee in recognition of his services as the founder of the National Rose Show, and very justly so; but I think I am not wrong in saying that if attendances had been counted he would long since have ceased to be a member. It is of little moment there, but would be a serious matter in the Council. There are plenty of men in and about London who can well fill this position, and by all means let such be chosen.—NOT AN F.R.H.S.

[APPENDED is the Report of the Professor of Botany, which, from want of space, we were compelled to omit from our number of February 13th.]

DURING the past year I have endeavoured, as far as possible, to carry out regularly the duties assigned to the Professor of Botany in the last Report of the Council.

In the months of April, May, and June I delivered a course of six lectures on "Flowers and Fruits." The average attendance at each lecture was about fifty persons. I may perhaps be permitted to remark that it would add considerably to the comfort of the audience if, on future occasions, access could be obtained to the offices without the necessity of traversing the Council-room while the lecture is proceeding. I have to thank Messrs. Veitch for the loan of numerous plants for purposes of illustration, besides those which I obtained from the Society's own gardens.

During the Birmingham Show a Horticultural Congress was held on the afternoons of the 26th and 27th of June. Introductory addresses were delivered by myself and Mr. Moore, and ten papers were read. The want of time for adequate discussion was, however, felt to be a great drawback to the practical usefulness of the meetings. It appears to me very desirable that, if held at all, the Congress should continue to be under the auspices of the Society; but I am inclined to think that it would be better to confine it to a single evening meeting, at which one or two subjects only should be taken up.

The Journal of the Society will for the future be published quarterly, under the joint editorship of the Rev. M. J. Berkeley and myself. Each number will contain, in addition to other matter connected with the scientific work of the Society, a brief *résumé* of the Chiswick meteorological observations, with respect to which further information will be found in the Report of the Board of Direction. In exchange for the Chiswick meteorological observations, the Director of the Meteorological Office has regularly sent to the Society the daily charts placed in the Council-room.

At the commencement of April the Council placed the charge of the Lindley Library in my hands. Having to a considerable extent re-arranged the books, I was able to suggest to the Trustees the sale of seventy-six volumes which were either duplicates or unconnected with botanical or horticultural subjects. During the past year 103 volumes have been added, and seventy-nine volumes bound. Access to this library I have found of the greatest possible importance in the performance of my official work, more especially on the show days.

On the 18th of July I despatched to the Jardin des Plantes a collection of forty-two species of Orchids from the Society's collection. These, together with a collection from W. Marshall, Esq., reached Paris in good condition, and during the summer I had the satisfaction of personally seeing the appreciation in which they were held. Besides engaging in a considerable and

increasing correspondence, I have determined the names of 189 plants sent to me for that purpose.

There is one point which I wish in conclusion to take this opportunity of more especially urging. I am strongly impressed with the inequality in value of the certificates awarded by the Floral Committee. It appears to me that the enterprise and expense of introducing an important new plant into the country is ordinarily far greater than that involved in producing a new florists' variety of an old-established species. I think, therefore, that the two classes of cultivated plants should receive different forms of certificate. The number of first-class varieties of the Dahlia, for example, is endless. The result must be, I cannot but think, to reduce the value of the first-class certificate. At any rate it must make such a distinction appear inadequate when a new plant of the importance of, say, *Phalænopsis Schilleriana* makes its appearance for the first time at the Society.

W. T. THISELTON DYER, *Professor of Botany.*

LEUCADENDRON ARGENTEUM.

CAN you tell me the name of the tree of which the enclosed is a leaf? It is a native of the Cape of Good Hope, and is called there "a Pine." I should also like to know under what treatment the seeds are most likely to germinate. The seeds are hard, like the fruit of the Stone Pine, with very pretty feathery awns attached, spirally twisted.—H. W.

[The leaf enclosed is one from a Witteboom, as the Dutch Cape settlers call it, *Leucadendron argenteum*, or Silver Tree. At the Cape the wood was generally and mercilessly used for fuel, so that there it is almost extinct. It was introduced here as an ornamental shrub as long since as 1693, its bright silvery leaves being very beautiful. Its flowers are yellow. The seeds will sometimes remain in the ground six or eight months, and at other times the plants will appear in six weeks; therefore the best way is to sow the seeds in small pots filled with sandy loam, and plunge them in a moderate hotbed; and if the plants should not come up so soon as expected, the pots should remain in shelter till the following spring, when, if the seeds remain sound, the plants will come up. The pots in which the seeds are sown should have but little water, for moisture frequently causes them to rot. When the plants appear they should not be too tenderly treated, nor should they have much water; but in warm weather they must be exposed to the open air in a sheltered situation, and in winter protected from frost.

The plant may be propagated by cuttings of the ripened shoots in summer, in sand, under a glass, and kept cool until the base of the cutting has callused, when extra heat may be applied. The soil should be fibry loam and sandy peat, with a few rough pieces of charcoal to keep the compost open. Winter temperature, 38° to 45°.—Eds.]

RATING NURSERYMEN'S GLAZED STRUCTURES.

I AM a nurseryman and florist, and I took a piece of grass land several years since, and now have placed a lot of greenhouses and pits on the same, which I have the right in my lease at any time to remove, even to sell to anyone. I wish to know if they are rateable to the poor? I am told they are as much my stock-in-trade as the pots and pans in a tinman's shop, and are not subject to the poor rate; indeed, how could I carry on my business as a florist and nurseryman without them?—J. WILLIAMS.

[We have repeatedly expressed our opinion that a nurseryman's and florist's greenhouses and hothouses are not rateable. They are mere shelters for his stock-in-trade, and are on a large scale what the copings on his walls, and the frames on his hotbeds are. Under certain circumstances stock-in-trade is rateable, but as a farmer is not liable to be rated for his stock-in-trade needed for carrying on his business, so even if a nurseryman's glass houses were considered stock-in-trade they are needed for carrying on his business. Nevertheless, as opinions have for long differed upon the point, it is useless to discuss them in any journal, and we strongly recommend nurserymen, florists, and others interested in the final decision of the dispute to subscribe and have the case decided by one of the superior courts.—Eds.]

ROSE MARIE BAUMANN.—I can fully endorse all that Mr. Cant says in respect of Marie Baumann. From the beginning it has been with me a great favourite, I have never failed on going to that row to cut a perfect bloom, and as an amateur I

have been proud to show it. The only disadvantage is that with me the stalk is weak, otherwise the flower and foliage are all that I could wish.—T. W. JOHNSON, *Uxbridge.*

EVENING MUSINGS FOR PLAIN PEOPLE.—No. 2.

THAT the idea is common—too common, that a separate house for Vines is a necessity is proved by the perplexity of those contemplating the erection of a glass structure, and who hesitate lest they should not be able to produce Grapes and plants under the same roof, and by the same treatment as to heating and airing. The best answers to doubts of this nature are facts. Excellent crops of Grapes are, in places innumerable, each year produced in houses that are crowded with bedding plants six or eight months out of the twelve. Indeed, in the treatment of the two—Vines and other plants—there is nothing really antagonistic under certain conditions. The same temperature, a minimum of 40°, is suitable alike for flowering plants and Vines during the winter months, and the higher temperature of spring, necessary to the Vines, is suited also to the plants until the time arrives for their removal into frames or sheltered places out of doors. The prime condition to attend to in the combination is to keep the house as cool as possible, and for as long as possible, in the spring, that is until the Vines are determined to grow, as it were, naturally. Black Hamburg, Buckland Sweetwater, and other early and good Grapes, will then ripen well during the summer with no fire heat, unless the season is singularly unfavourable, the house much exposed, or the latitude beyond 53° N. The fact is, that thousands of bedding plants can be preserved, and abundance of excellent table Grapes can be had from even a moderate-sized house at scarcely any cost at all as regards firing. I can give a case in point, for under my charge is a house closely staged for plants, and always crammed from November till May, yet the Vines above them produce abundantly and ripen their fruit perfectly, yet the cost of firing does not amount to a shilling a month taking the year round. During the year just ended it did not cost half that sum, insignificant as it is. The secret lies in keeping the Vines back in the spring, not forcing them to burst their buds until the weather begins to be genial, and then economising and managing the sun heat. A fire, even at night, is then only very seldom an absolute necessity.

I speak from actual and extended experience when I assert that no harm will happen to a house of Black Hamburg Grapes at any stage whatever—blooming, setting, stoning, or colouring, if the minimum temperature do not fall below 50°, and the enclosed sun heat will generally provide this if the Vines are not forced into growth by fire heat early in spring. The way, therefore, to have bedding plants and Grapes, and have them cheap, and no fear about either not being good useful stuff, is to use as little fire as possible, and take care of the sun. The way to begin is to retard the breaking of the Vines until as late as can be done in the spring. The palate, the eye, and the pocket, difficult as each is to satisfy, are all here considered. The hint is specially recommended to all (and these are the greatest number) whose pockets are not well filled, and who yet wish to have Grapes and plants of their own growing from the same house.

But there is a class, and a very large one withal, who have room for a vinery adjoining their little villa and suburban residences, but who have next to no flower garden to furnish. Bedding plants here would be a superfluity—a misnomer. What can they grow under the Vines? An empty house—that is, a house devoid of plants, would have, perhaps, no charms, notwithstanding the Grapes. Can nothing attractive be grown in the way of decorative plants? Does Echo answer "Nothing?" Then Echo is at fault this time. What of bulbs, those vernal gems, which burst their fetters, and in the liberty of new-born beauty will diffuse their smiles and dispense their fragrance, in spite of Vines or prejudice, wherever their simple wants can be attended to? What of many other spring-blooming plants, of Primulas and Cinerarias, for instance? Cannot they be reared in the spring, and nursed on in little pots for awhile until transferred to cold frames to perfect their growth, or, even lacking these, in shady places in the open air? Of course they can, and they will give a bright return in nine months from the day of sowing. Cannot Chrysanthemums be struck in the house to be grown out-doors, and brought-in in autumn to give a feast of floral beauty? Yes, these and many other things are adapted for vinery occupation without really doing any harm whatever to Vines or Grapes. Especially it is

so, now that the fact is established, that if the ripe Grapes are not eaten they can be cut and kept with the shoots in bottles of water as well as on the Vines.

But there is a family of plants of the greatest possible value and beauty, combined with easy culture, that is perfectly at home in conjunction with Vines. The progressive heat of the vinery in spring and its attendant moisture are exactly suited to the plants, and the dreaded shade of the Vines becomes an actual advantage. It is something, that with a solitary glass crection the finest of all the earth's fruits may be had hanging overhead, while beneath may be enjoyed a family of plants which, for variety, beauty, texture, and symmetry of bloom, have few equals. It is something—yea, it is a great deal, that these great and acknowledged gifts of Flora and Pomona will live so well in harmony together, both at home, and alike happy in each other's company. The house-to-itself theory as an absolute necessity is out of court the moment we mention Vines and Camellias.—J. W., *Lincoln*.

LABELS AND TALLIES.

OUR notice of the Gorrie ground-fast tally has induced two other inventors to submit to us their patterns. In one case the material of which the tallies are made is apparently 21-oz. glass, and they are fashioned after the form of the ordinary wooden tally used in flower-pots, the name of the plant being scratched on the glass with a diamond. Another pattern of the same material is a small rectangular piece with a hole drilled near the upper edge to suspend it by a wire to the plant, or to nail it against a wall or other support, the name also being written on with a diamond. These are, no doubt, sufficiently permanent, but the writing requires to be closely inspected to be readable; and those that are intended to be inserted in the soil of the pot cannot fail to be liable to breakage. They are certainly clean, neat, and imperishable.

The other design is the same as what is used very commonly in France, and consists of strips of thin lead, numbered or named by impressing stamps on them. There is no doubt that these will be sufficiently permanent, the only objection being the trouble and labour of impressing such long names as are usually found among plants and fruits. If these strips were of zinc, and simply written on with ink, no labour would be incurred. These are prepared by E. Vances, 15, Baker Street, Portman Square. The same maker produces them in strips of brass, impressed in the same way as the lead is.

To the amateur in gardening matters, I know of nothing causing more annoyance than the question of labels and tallies; for mere bedding-out plants, and the entire class of the gaudy ephemerals of the ribbon border, common white-leaved tallies are quite good enough. But then we have these gems, our dear old herbaceous flowers, which year after year, at their appointed season, come to greet us with their smiling countenances, like so many old familiar friends, each of which has a double history; their addition to our collection, more probably than from the nursery of a Ware or a Backhouse, the gift of a neighbour, the memento of a visit, or the souvenir of some departed friend; and then that other history, full particulars of nomenclature, derivation, and classification, the countries they were natives of, year of introduction, &c., all faithfully gleaned from our staunch ally "Johnson's Gardeners' Dictionary."

If we depend for the names of the numerous yearly additions to our stock, on the common tally, ere another blooming time comes round, it is almost illegible, if not a total blank; or, it may be, a matted package arrives from Sawbridgeworth or Worcester—be it miniature fruit trees or Rose bushes, how very few months do the little pennants flutter in the breeze, till again obliteration ensues! But it is the merest tyro who would depend on such; we must have the best of all plans, our garden book, and a clear record of name and position registered in black and white. But then our book is not at hand the moment it is wanted, it has to be sought for at the house, and possibly by another spring some poor shrinking little Mrs. Ward has to relinquish her position to a freshly imported Mademoiselle or Madame, who takes her place beside her more stalwart English brother, John Hopper. Or some symmetrical pyramid is ordered, like a Bon Chrétien, to move into a more prominent site from his old stance in the nursery row, and after this has been repeated many times in all the bustle of a spring day, while pushing on work, the memory is too apt to be depended upon for the changes, and the book meanwhile overlooked. Is it to be wondered at, that by-and-by comes the question,

Which is which? And then how interest always languishes in the anonyme, till at last, to solve the enigma, off goes the basket of first fruits or first blooms to Fleet Street. The small type of "our Journal" bears ample evidence to the extent of trouble our Editors must be subjected to, and I am at a loss whether to admire the more the amount of their patience or the extent of their knowledge.

To obviate all this, is it surprising we should "go in" for all manner of indelible inks, and be found scratching away with an old goose quill on a greasy zinc surface, to afterwards discover how exposure to the weather causes first the hair, and then the down stroke to disappear, and such discovery is by no means enviable? Next we may invest largely in a whole box of the neatest of terra cotta labels, and with a camel's hair brush and japanner's ink, go again hopefully to work; the winter passes, and how consolatory after all our trouble to be told by our seedsman that he could not guarantee them to stand frost, but they did capitally for inside work.

The last summer found us as much as ever in quest of a suitable and enduring tally. Some needful repairs induced the substitution of plate for the common window glass, and we parted with our old small panes and massive woodwork with one regret—the numerous mementoes of "auld lang syne" inscribed thereon. Here on one pane we had a row of ladies' names in bold masculine characters, to which were archly linked the names of the gentlemen writers opposite in sharp female hand; and but to think that the thoughtless amusement of a passing hour, with a diamond ring, on possibly a wet day, in a country house, dating far back into the last century, should be so fixedly engraved long after that happy group were themselves mouldered into dust! The same pane included, with subsequent additions, the names of three generations of the same family; and we recognise the neat little calligraphy of the moralist of fifty years ago, who aptly sums-up his cogitations with "*Tempus fugit, nunquam revertitur.*" He, too, for more than a score years has been numbered with the dead. In the happy days of the writer's boyhood, when, awakened from his slumbers by the cawing of the rooks or the cushat's plaintive notes, he darted out of bed, on pulling up his blind, ere he could drink in the full beauty of the landscape and all the glories of the early summer's morn, the rising sun made ah! how plain, in the handwriting of a near relative, alas! too, passed away, the apropos line from Scott—

"Wake where'er he may,
Man wakes to care and toil."

The full meaning of the words I could not so well appreciate then as now. But I forget the reader may very naturally ask, What has all this to do with labels and tallies? Simply this, that thus the idea suggested itself; here was what we are searching for—indelible permanency; that in our day glass is marvellously cheap; and as for diamonds, why, the daily press gives continuous quotations from the diamond fields. So I forthwith procured a supply of labels and tallies in that material of 21-oz. sheet and a writing diamond, and set to work again, with what success I will allow "our Editors" to judge from the four specimens sent herewith, selected at random. No. 1 I attach to fruit trees with a stout copper wire; No. 2 to octagon green-painted Rose poles. This is bevelled off at the top, and a little below the bevel it is secured in its place with a three-quarter-inch copper tack pressed with the thumb into a hole previously bored with a little awl. Nos. 3 and 4 have their place in the herbaceous borders, the smaller size for pot plants and the more miniature varieties of the front rows. Both are inserted well into the soil and close to the plants, clear of intruding foot and rake-head. The moist earth has the reverse effect on them that it has on the old tally—instead of removing the inscription it enamels it into greater plainness. The distinctness of the suspended labels is only temporarily affected with hanging moisture or frost incrustations; but no sooner does the sun shine upon them than they reflect back his rays, and glitter beautifully cleaned and as legible as ever.

I have thus detailed how a great gardening want has here been satisfactorily supplied, in case any of your readers may feel disposed to adopt the discovery of—A RENFREWSHIRE BEE-KEEPER.

CHAMÆROPS FORTUNEL.

YOUR correspondent "EXPERTO CREDE" having pointed out this plant as being hardy, I herewith beg to confirm all he has said in this respect, with a certain amount of qualification, not as respects its hardness, for I believe that has been fully

established, but as regards the position best suited for it. Although the plant will endure a great amount of cold, it does not flourish everywhere, and where it does not, its appearance is anything but what it ought to be. My experience with it dates from some ten years ago, when I became possessed of a few plants, not large ones. A part of them I brought forward in pots, the remainder I planted out in a cold pit where choice Pinuses and the like were wintered. They remained in that pit about two years, when three or four of them were planted out, two in small circular beds on the turf in a tolerably good position, but not sheltered from winds, and I soon found the tips of the foliage became browned and useless. Though this has been by degrees replaced by other foliage, the plants still present the same crippled appearance, only a portion of the base of the leaf remaining, and the points being all destroyed. Of course the progress of the plant is slow; but one plant which has a more sheltered position, being planted upon a south border amongst Yuccas and Irises where the wind has but little chance of injuring it, has flourished. Although we have had two rather severe winters since it was placed in its present position, it has never shown the least injury either from wind or frost, and looks as well as other plants of a like kind in pots in the greenhouse. But it is a slow-growing plant, and not likely to be a favourite with those who have fine-foliaged plants to furnish by the hundred for the flower garden. It must, however, be remembered that its appearance is good at all times, and if grown at all it ought to occupy the favoured position undisturbed for at least half a dozen years.

As a sort of oriental poetry attaches to the name of Palm, a species that will survive an English winter must at all times be interesting. Patience in its culture is the only requisite to insure success; for this plant cannot be multiplied like the ordinary occupants of a flower garden—indeed I am not sure that it can be obtained by any other means than by seeds. The quality of these ought not to be too hastily condemned, for about a year ago I obtained some from a London seedsman, and knowing them to be very irregular in germinating, I placed each seed in a separate pot. This was done at the end of January or beginning of February, and I believe none of the seedlings made their appearance till May. Some came up at various times during the summer, the last one as late as November, at least nine months after sowing, while some seeds have not vegetated yet, although they have been the whole time in the Pine pit. It will, therefore, be seen that the plant cannot well be hurried-on in any of its stages; time must be allowed it, and unless this can be afforded I would not recommend its cultivation; for its growth and fine appearance, as with tree Ferns and some other plants, are not secured in the short period allotted to many of the other denizens of the plant house and parterre, but brought about by years of occupation of a suitable site.—J. ROBSON.

IMPERFECT HYBRIDITY.

By I. ANDERSON-HENRY, ESQ.

AMONG the same batch of seedlings from which I obtained *Veronica Andersonii*—*V. sabicefolia* (syn. *V. Lindleyana*) × *V. speciosa*—came one which, to all appearance, was a reproduction of the male parent pure and simple. And deeming it nothing else, I presented it to a friend, *V. speciosa* being then comparatively a new plant; and he, when he flowered it, came to tell me that it had come a very different thing in bloom to the true *V. speciosa*, having much longer flower-spikes and of a much lighter colour than those in that species, being of a light crimson instead of a dark purple, as in the *V. speciosa*.

A plant of this hybrid has since afforded a further illustration of a somewhat similar result.

Having obtained a suffruticose species of *Veronica*, under the name of *V. Daubeneyana*, with light-coloured flowers striated with pink lines, in the way of *V. fruticulosa*, I crossed it on the last-mentioned hybrid, which became the seed-bearer. From this cross I succeeded in raising only two plants; and one of these I believe I have lost. But they seemed both alike in foliage and habit; but both so like the hybrid seed-bearers that I felt doubtful whether the cross had taken. I cannot speak with confidence as to their being identically alike, but only of their general aspect. The plant I still possess flowered for the first time this past season; and the singularity of its bloom drew my attention to it more particularly than before. It had, like the seed-bearer, thick fleshy pyriform leaves, but somewhat smaller and more closely set on the stem; but instead of being, like it, simply cruciform, they were obliquely

decussate, therein slightly approaching the male parent, a creeping alpine species whose prostrate stems show still more the same deflected arrangement of the leaves. It was only on a close examination of the part, however, that any resemblance to the male, *V. Daubeneyana*, could be observed. In fact I looked upon it as another of the many failures I had had in my attempts to effect the inverse cross on it. When it at last bloomed, my hopes of having effected a partial cross, if I may use such a term, were strengthened. Like *V. Daubeneyana*, which has a spikelet with a few blooms, it came even short of it, having had only two flowers, and these much lighter in colour, and no nearer to the male than the hybrid female parent; but whether this is its true permanent character I dare not assert, as it bore no more than this one spikelet of two flowers.

In the first of the above instances the hybrid seemed, till it flowered, a repetition of the male parent; in the second it seemed, till it bloomed, a repetition of the female parent, with such slight differences in the arrangement and slightly smaller size of the foliage as might occur in a purely normal seedling. In fact, seldom have I ever seen two hybrids with so much of one parent and so little of the other.

I have no doubt something of the same kind occurs among *Rhododendrons*. But I may only instance one case where I crossed *R. Edgworthii* on *R. caucasicum*; the seedlings, ever few when the cross is a severe one (by which term I mean such instances as where the species do not affect each other kindly), were only two in number; and though now about ten years old they show no indications of setting for flower. But while they have both the glabrous foliage of the seed-bearer, and even the ochreous tint underneath, they differ in having pyriform instead of its lanceolate leaves. But though in these particulars they depart from the normal state of *R. caucasicum*, they have not one feature of *R. Edgworthii*, the male parent. The other case is where I crossed the same *R. Edgworthii* on *R. Jenkinsii*. Here the seedlings, again only two in number, were all of the mother, except in having again the pyriform foliage, in which, be it observed, it is a departure from both parents, both having lanceolate leaves, those of *R. Jenkinsii* being acutely so. The hybrid in this latter case is budded for flower; but the flowers of both parents are white, and both sweet-scented, and among the largest of the genus, though the scent, texture, and forms of the flowers are different; so that I look for surer tests in the coming flowers, though these may be more perplexing too than any that yet appears. It is proper to observe that I take the utmost precaution in all my crossing operations to prevent miscarriage in any possible way.

While treating of my difficulties with this *R. Edgworthii*, one of the most peculiarly constituted, as it is one of the most peculiarly featured of all the *Rhododendron* tribe, having its rugose leaves densely pubescent on the upper while it is perfectly shaggy with tomentum on the under side, every stem being clothed with the same tomentum, I have another most singular peculiarity to note in regard to it—namely, that while it will cross other species it will take on a cross from none—that is to say, while it has been repeatedly made the male, it has never with me, though I have tried it often, nor with any other that I have heard of, submitted to become the female parent. I have crossed it repeatedly on *R. ciliatum*, one of the minor forms, too, of Dr. Hooker's Himalayan species. It has been crossed, too, on *R. formosum* in this neighbourhood, I believe, in the Stanwell Nursery; but I never could get it to take on any cross whatever. *R. Nuttallii* behaved with me in the same manner; it would cross but not be crossed; but I did not persevere with it as I did with *R. Edgworthii*. Now, I do not assert absolutely that *R. Edgworthii*, in the numerous tribe of which it is a member, may not be hybridised with some other of its kindred, but I could never get it to reciprocate a cross. And this remarkable circumstance of non-reciprocity has perplexed and defied me in innumerable instances throughout my long experience in these pursuits. It occurred to me that the pollen of larger forms might be of larger grains, and so might not pass through the necessarily small ducts of the styles of smaller species; yet *R. ciliatum*, a tiny species of 1 foot high, was crossed freely by *R. Edgworthii*, as I have just noticed, a species of 6 feet high. I even crossed this latter species on a pure Indian *Azalea*, though, by pulling the seed-pod before it was ripe, I raised no seeds of this latter cross.

In these hasty observations I merely wish to direct attention to such instances of imperfect hybridity in certain species, and

the non-reciprocity in others, as I have noticed, in the hope of perhaps drawing out from others their experiences of such matters, which I humbly think are not unworthy the consideration of the Scientific Committee.—(*Journal of Royal Horticultural Society.*)

A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 4.

LYCASTE.

As a genus this comes very near to *Maxillaria*, differing, however, in some slight degree, in the arrangement or disposition of the pollen masses, which to the amateur grower is not of vital importance. There are several good and showy species well deserving the attention of those with sufficient accommodation, but the best of all is *L. Skinneri*, and as this species breaks into such a great variety, both in the intensity of colour and disposition of the markings, the amateur should endeavour to find space for as many plants as possible. The cultivation of *Lycaste* is extremely simple. The soil should be a mixture of peat, sphagnum moss, and a little sand. Water should be given in abundance during the summer, and at no time should it be entirely withheld.

L. SKINNERI.—This plant (represented in the accompanying illustration) has stout pseudobulbs, and large, dark green, plicate leaves. The scape rises from the base of the bulbs, and bears a single very large flower, which lasts a long time in full beauty. The colour of the flowers varies from pure waxy white tinged with rose, to rich crimson. They are produced in great profusion, and appearing, as they do, all through the winter and spring months, they are doubly valuable. This plant is very hardy in constitution, and has a fine effect in the boudoir when in flower; it may be kept there in full beauty during winter for two or three months without suffering the slightest harm. It is a native of the highland regions of Guatemala.

L. HARRISONI.—This very fine old species is placed by some authorities in the genus *Maxillaria*, whilst others place it in *Bifrenaria*. The flowers are large, measuring upwards of 3 inches in diameter; the sepals and petals are broad, fleshy, and waxy white, whilst the lip, which is rich velvety purple and lilac, forms a lovely contrast to them. The flowers remain in full beauty for a great length of time, usually opening in May. It comes from Brazil.—**EXPERTO CREDE.**

ADIANTUM FORMOSUM.

THE above-named Fern, noticed by your correspondent "W. T. F. M. I.," is certainly an exceedingly useful variety. It is very easily cultivated and can be propagated freely, the mature fronds have also the good quality of keeping longer after been cut than any other of the species; but that it is more beautiful than *A. cuneatum* I cannot admit. It is quite as easy to grow. I noticed it in an article on Ferns last year. The method alluded to of inverting a small garden saucer inside a larger one, so that the bottom of the pot just touches

the surface of the water is good, when the plants have quite filled their pots with roots. I have some Ferns which are grown for exhibition, and must not be shifted into pots larger than 12 inches in diameter; they require watering twice or thrice a day in summer, and often suffer from neglect when standing on the stage with other plants, but when the pots are placed bodily in saucers of water they are not a tithe of the trouble, and seem to do well with the treatment.—**J. DOUGLAS.**

THE COMMON BIRCH.

Very few hardy deciduous trees are equal in beauty or grace

to the common Birch, *Betula alba*. Hardy and accommodating in its nature, it thrives perfectly well in situations and soils where other trees could barely exist. Many a stern mountain side or rocky glen, that would otherwise be utterly bare, does it clothe and make cheerful with its pretty summer greenery, or picturesque when in its winter guise of pendulous spray, that in its red-brown hue contrasts so charmingly with the silvery sheen of the glossy white bark. It is, doubtless, most liked in its old age, when its pliant branches, drooping with a graceful sweep from its lofty top, yield to the influence of every breeze more readily than the Aspen; but it also possesses so much beauty in its infancy, long before it has attained the dignity of a tree, as to render it worthy of a prominent position among the choicest of our shrubs. It is true that the graceful air imparted to the tree by its drooping branches is not then present, but still there is elegance of form with that sprightly up-springing air so peculiar to that tree. To my mind very few objects in plant life are more beautiful than a Birch of ten or twelve years' growth, as when on some dull murky day of dreary November the mass of slender spray is seen laden with thousands of liquid globules, imparting an air of life and animation that is most striking; or in spring, just when the buds are expanding into foliage of the most delicate

yet bright green shade, so different is it then to all other deciduous trees. To those who care most for evergreen shrubs—to all I would say, If you have not yet introduced the Birch into your shrubberies do so, and you will have an object that is so beautiful in itself, and has such distinctive characteristics, that it is a desirable subject for affording relief from tameness or monotony, and to contribute to the elegance and finish of pleasure grounds of the most refined or dignified aspect.—**EDWARD LUCKHURST.**

DARK-LEAVED BEET AS A WINTER-GARDEN PLANT.

THREE or four years ago, having a number of small plants of dark-leaved ornamental Beet that were too small for culinary purposes at the usual taking-up time, I tried them in the flower beds for winter decoration. Although I found them not so effective there as plants with a light-coloured foliage, they were, nevertheless, useful in connection with others, and unless the winter is very severe, only the large outer leaves succumb to



Lycaste Skinneri.

the cold, while the young or smaller leaves form a tufty-looking plant with the colour as good as in the best part of the summer. No plant can be more convenient in regard to its transplanting qualities, and when mixed with light-coloured flowering bulbs, as Snowdrops, Crocuses, or with the still earlier and more accommodating single white Primrose, Beet becomes a great acquisition, its colour being so good that I once thought of trying it for plant-house decoration. I find, however, it has one drawback which will prevent its holding a high position on the dinner-table, either as a plant entire or by its foliage only, as an adjunct to the flower-stand. Its leaves are not transparent like those of the Iresine; consequently that rich tint which is seen in looking through the foliage of the latter has no existence in the Beet, which, in fact, appears dull with artificial light. For the winter decoration of the flower beds it is well worthy of a place, and it is for that purpose I now recommend it, feeling assured it will give satisfaction. Its easy propagation is an additional merit, for, as before stated, the small plants, unfit for the kitchen or salads, are just those wanted for ornamental purposes.—J. ROBSON.

NOTES AND GLEANINGS.

In the new HORTICULTURAL DIRECTORY for 1873, just issued, a valuable addition has been made by including the foresters or woodrevs in Great Britain and Ireland.

— THE value of POTATOES imported last month was £282,303, and £15,987 in January last year; while in the same month of 1871 the declared value was only £222.

— WE learn that the Council of the Royal Society are about to nominate Dr. JOSEPH D. HOOKER as President of the Society, in succession to Sir George Airy, who has announced his intention of retiring from that office at the anniversary meeting in November next.

— AT A SALE OF ORCHIDS AND OTHER PLANTS which took place last week at Mr. Stevens's Rooms, King Street, Covent Garden, the following prices were realised—viz., *Odontoglossum vexillarium*, £3 12s. 6d., £4 10s., £5 5s., £6 10s., and £9 9s.; *Odontoglossum Andersoni*, £6 15s.; *Odontoglossum crispum* (Alexandree), £2 10s. to £5 15s. Among Tree Ferns, *Dicksonia antarctica* with stems from 6 to 7 feet high, brought from £4 10s. to £6 10s.; *Cyathea dealbata* with stems 5 feet 6 inches to 7 feet 6 inches high, from £2 5s. to £3 10s. Fine specimen *Camellias* also commanded prices ranging from £2 7s. 6d. to £10 10s. The total amount realised was nearly £400.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE condition of the ground is still unfavourable for cropping. No attempt should be made to get in the main crops where the soil is wet and heavy; no time will be gained by so doing. Permanent beds of *Asparagus* should now be planted, and the old ones filled-up; two-year-old roots are to be preferred. Give air freely to that in frames, and make other beds for succession. If the weather permit plant out the *Broad Beans* in pots and boxes; earth them up after planting. Put in another crop of Windsor or Longpod Beans. Where there are more than three *Cauliflowers* under each hand-glass they must be thinned-out to that number and planted on a rich piece of ground; or if the Celery trenches are opened and manured the Cauliflowers may be planted in them, as they will be ready to come off before the trenches are required for the Celery. Add fresh soil as the roots of the *Cucumber* plants appear on the outside of the hill, lay it down close to the side of the frame for a few days before it is required that it may become warm. Put in more seed for successional crops. *Herbs* should now be sown, or propagated by division of the roots. Plant-out the *Peas* in pots and boxes on a south border; plant them thinly in the rows, even should it be necessary to shake the whole of the soil from their roots. If the soil of the border should be stiff and wet lay a little leaf mould over the roots. Successional crops should now be got in. It is generally necessary to sow two or more crops at one time, unless the quick-bearing kinds only are used. In planting the early crop of *Potatoes* it is of great advantage to draw deep drills, partially fill them with leaf mould, then plant the *Potatoes* and fill-up with the same. Whenever the produce of *Sea-kale* is cut from the roots, and it is not likely there will be more shoots from it fit for use, clear away the litter and cut the long straggling shoots nearly down to the ground; this will keep them within the compass of a pot or box.

FRUIT GARDEN.

See that recently transplanted trees are not suffering from

want of water, a circumstance which, however, will hardly happen except in very dry porous soil, and in such cases the ground should be mulched with decayed leaves to preserve it in a uniformly moist state. Get materials in readiness for the preservation of blossoms of fruit trees. Where nothing better or more convenient can be obtained, Yew or Spruce branches will be of service provided they are so fixed as not to be liable to be blown against the blossoms. Remove the covering as frequently as may be convenient on fine days, so as to fully expose the trees to sun and air.

FLOWER GARDEN.

In the flower garden many of the spring bulbs will be now showing bloom, it will, therefore, be necessary on a dry day to hoe the beds over so as to freshen them up and make them a little neat. After the late frost the lawn should be raked over with the Daisy-rake to clear the grass of worm-casts and stones, and to be rolled with a heavy roller at least once a week. Where the grass is coarse it is a good plan to have it mown, cutting it close to the ground at this season, and where the herbage is thin or does not cut well, a little Dutch clover seed should be sown and afterwards thinly covered with some rich soil. To those parts of the lawn which soon burn-up in dry weather, apply a dressing of wood ashes and soot with a little sand, and if more convenient give a good soaking of liquid manure. Relay or repair Box edgings and grass verges so as to have everything ready for trimming the walks as soon as the weather becomes favourable. Most of the hardy Roses being now pruned, the beds may receive their spring dressing. Plants that were much infested with green fly last season may be cleaned of the eggs of that or any other insect by syringing them with water at the temperature of 160°, or by painting them over with lime, soot, and cowdung mixed to the consistency of thin paint with strong soapsuds. This is a certain remedy. But little progress has been made during the past week in the florist's department owing to the extreme variability of the weather, the very fickleness of which requires great vigilance on the amateur's part. Polyanthus ought to be procured without delay. The following may be relied on as good show flowers:—Pearson's Alexander, Buck's George IV., Bullock's Lancer, Hufton's Early Grey, Lord Ranelagh, and Crownshaw's Invincible. The seed of *Ranunculus* must be kept moderately moist by dipping a brush in tepid water and drawing the hand over it to cause the drops to fall lightly so that the soil covering it may not be displaced. Make ready for potting Carnations, get the compost under cover the first fine dry day, it being very injurious to the layers to put them in soil that is too wet. Try to grow some *Pinks* in large pots, mixing a little rough charcoal with the soil, they will repay the trouble. Pinch-off the leading shoots of *Pansies* to make your plants stocky. Top-dress with rotten manure.

GREENHOUSE AND CONSERVATORY.

THE time for potting plants has now arrived, and the greatest care is necessary in the selection of proper composts for different families, good friable loam, fibrous turfy peat, leaf mould, and sand are the proper materials from which compost for all kinds of plants may easily be made. One-third peat, one-third leaf mould, and the other third of loam and sand will make a suitable compost for young plants of nine-tenths of these in cultivation. Older plants will require the proportion of peat lessened, and that of the loam increased; sandy peat alone is used for *Heaths*, *Epacris*, and such like, but the more robust of these and all the Chinese *Azaleas* ought to have one-third leaf mould added to their compost. Two-thirds loam and one-third leaf mould, charcoal, and sand form a good compost for *Orange trees*, *Neriums*, and many other strong woody plants. Old-established plants in the conservatory need not be potted for the next six weeks. Old plants in general do not require to be so early potted as the young portion of the collection.

STOVE.

AS many of the plants will now begin to grow, they will require an increase of heat and moisture. Plants that have been starved from want of water and pot room to cause them to flower should now be potted and plunged in a brisk bottom heat. Syringe them frequently, but give them very little water at the roots until they begin to grow. Keep the temperature at about 60° by night. It may be allowed to rise 10° to 15° by day, but give air at 70°.

PITS AND FRAMES.

THE plants here which hitherto have been kept quite dry may now receive a gentle watering on some sunny morning, and be encouraged to grow a little. Give plenty of air in the daytime, but cover securely at night. Proceed with the potting of the autumn stock plants, and the pricking-out of tender annuals, which should always be attended to before they become crowded in the seed-pots, and encourage the plants afterwards in a close gentle heat until they are established in the new soil. Pot *Tigridia pavonia* and *conchiflora* in light turfy soil, putting two bulbs into a 48-sized pot, and placing them in a warm frame or forcing house until they begin to grow. Make a sowing in heat of *Oenothera macrocarpa* and *taraxacifolia*, two very useful

plants which flower beautifully in the autumn if sown at this time.—W. KEANE.

DOINGS OF THE LAST WEEK.

THE weather has been extremely changeable—mild, frosty, snowy; but we must be prepared for all contingencies. A loose surface is always an advantage. For Cabbages, Lettuces, Cauliflowers, &c., we are sure that a little *surface stirring* was of great advantage. A small fork or hoe does wonders in these matters. A loose surface of soil keeps cold and heat out. In such weather as this, how important it is to keep the cold out! How great is the advantage gained in the case of Broccoli coming on, and in that of young Cauliflowers under glass! The looser the surface, the more independent the plants are of the weather.

We are not at all surprised at the weather, we confidently expected frost and snow, now we must act accordingly. Potatoes, &c., turned out must be taken care of, no frost allowed to touch them, and yet not too much heat allowed to get near them. Read and reread what has been said lately as to protecting, covering, &c. We have given there the practice of a lifetime, and we wish every reader to stand on the same vantage ground as we do. Just see what we have said about Asparagus, Rhubarb, Sea-kale, &c. Plenty of them make matters pleasant, and we have never refrained from saying what is the best and most economical mode of growing them.

FRUIT GARDEN.

Out of doors there cannot be too much done in the way of pruning and nailing; but in houses, bear in mind, that in such dull weather beware of having a too high temperature. Nothing will thrive in this dull weather if there be extra heat given. Bear in mind that heat can do wonders, but that it cannot make up for the sun's rays.

ORNAMENTAL DEPARTMENT.

Just see that Calceolarias, &c., are kept cool. They will stand a little frost, but the less the better.

Protection to Cold Pits and Frames.—On the 13th, the snow having gone from the pits and frames with no artificial heat, we uncovered for the first time since the evening of the 1st inst., thirteen days and nights, and Calceolarias looked as well as if they had been shut up for a single night; no air, no light had been given to them for that time. All such trouble and labour of covering and uncovering were saved, and the plants were much better off than if presented with different extremes of temperature, &c. The only things to be cared for in such a case, as already referred to, is to make sure that the cold inside is not so great as to injure, and then it should be so cold as to present no stimulus to growth. The two longest periods we now recollect of having such half-hardy plants covered up was once for rather more than a month, and in the other case for fully five weeks. In the first case, without an opening for air, &c., the plants were as fresh as the day they were covered up. The only additional care was that the litter, &c., remained on for a day after the thaw, and as it soon was followed by a fair amount of sunshine, a little shade was left on for a day or two after air was given at the back. The other case, in which the covering was continued longer, would have been equally successful, only we had a lot of small plants injured for a width of 8 inches from the low back wall. This had nothing to do with the length of time of covering up, as the plants and cuttings, with the above exception, were safe and sound. The covering, chiefly of litter, over the glass was sufficient; the dwarf wall and the ground for 2 feet in front were so littered that frost could not enter. The back wall had only a little litter and straw shaken loosely against it. The ground close to it was frozen hard as adamant, and the frost also penetrated the wall. With a base of 3 inches at the ground, and a fence of from 1 to 1½ inch of straw tied firmly against the wall, we might have bid defiance to some 20° of frost; but in protecting the glass and front wall we were comparatively too careless of the north back wall, and the plants near it suffered accordingly. We acted too well on the principle of locking and bolting the doors and leaving the windows easy of access to any intruder. We have known not a few cases where plants in cold pits were more than amply protected as respects the glass, and yet the frost did its work by passing easily through the brick walls. Paradoxical though it seems, it is no less true that a porous damp wall of 9 inches will scarcely be such a safeguard against a severe continuous frost as a good-seasoned dry boarding of 2 inches thick.

We shall not have written in vain if our readers will think of the walls of their cold pits, if a severe frost should visit us. A brick is a good conductor of heat and cold alike. Once we saw a cold pit full of young plants of Camellias and Indian Azaleas irreparably injured, because, though the glass was protected, a temperature of 22° below freezing-point was allowed to pass through a 4½-inch wall, with 9-inch piers every 4 feet, and though the tops of the plants seemed to suffer little, the roots were injured by the soil about them, rather damp, being frozen as hard as a stone.

Of course, where there are the means of artificial heat such care need not apply, though even then, in the case of pits, a protection to the walls would greatly ease the furnace-work and the coal bill. Of course, also, it is clearly understood that where artificial heat is given to keep up growth, everything like continuous covering would be out of place, though in dark, stormy, cold snowy days we have allowed such covering to remain on for a day now and then. All the light possible under such circumstances is generally indispensable, and therefore, besides the requisite temperature, cleanness of the glass is the next most important consideration.

Violets.—Singularity enough, we said lately that these lost their aroma in frost, and we found it so time after time; but the other day we picked blooms under snow, and found them quite sweet.

We find that much care is requisite to keep plants safe; a little litter will often do wonders.—R. F.

TRADE CATALOGUES RECEIVED.

J. T. Rofe, Broomfield Floral Nursery, Cecil Road, New Town, Enfield.—*Catalogue of New and Select Kitchen Garden, Agricultural, and Flower Seeds.*

George Poulton, Fountain Nursery, Angel Road, Edmonton.—*Catalogue of Vegetable and Flower Seeds.*

W. Montgomery, 365, Argyle Street, and Haghill Nursery, Glasgow.—*Catalogue of Vegetable and Flower Seeds, Bedding Plants, &c.*

Ellwanger & Barry, Mount Hope Nurseries, Rochester, New York.—*Descriptive Catalogue of Fruits.*

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, N.W.—*Catalogue of Flower, Vegetable, and Agricultural Seeds.*

George Yates, 29, Little Underbank, Stockport.—*Descriptive Catalogue of Select Vegetable and Flower Seeds.*

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (G. T. B.).—The work you name can be obtained through any bookseller.

FRUIT OF CYDONIA JAPONICA.—"In a foreign catalogue, the Japan Quince, *Chromolaena (Cydonia) japonica*, is recommended as yielding an excellent fruit for preserving. Do you know anything about it? Some years ago the fruit of *Pyrus japonica* was thus recommended. I tried it, and found it very bad.—G. S." Any information in reply will oblige us, but as far as we know it is not injurious, but very unpalatable.

BULBS, &c. (A Young Beginner).—We cannot give botanical definitions. Every elementary book on botany contains them.

SEA-KALE BLANCHING (Peter).—The Sea-kale will come in naturally, or very nearly so, by the third week of March; but we should at once put on the pots, and cover at least enough for a fortnight's supply, using leaves or other materials that would afford just a slight warmth. Without this we fear, if the weather be cold, or frosty at night, you will be disappointed. For a later supply cover the pots with litter of some kind, for though the sun would warm the pots by day, a sharp frost at night would destroy the tender shoots; besides, you must exclude the light, and on that account alone the pots should be covered up with litter, putting it on the pots so as to hang over them, and exclude the light. Ashes, sawdust, or any other non-heating material would answer, but we prefer the long litter just to cover the pots, leaving the intervening spaces bare.

SALT FOR KITCHEN GARDEN (Nemo).—Over vacant spaces you may sow at the rate of twenty bushels per acre.

HERBACEOUS PEONIES (J. T., Belfast).—You could obtain them of any of the principal florists who advertise in our columns.

DIAGONAL CORDON TRAINING (An Amateur).—The more vigorous the trees, the greater deflection of the branches is desirable.

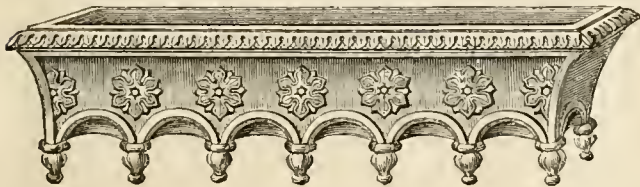
CUCUMBERS IN GREENHOUSE (P., Stafford).—Unless you keep your greenhouse closer and warmer than is either usual or good for greenhouse plants the Cucumbers in pots will not please you. Two good kinds are Volunteer and Telegraph. For out-door culture Stockwood Ridge is good. Potting Ferns in leaf mould without the admixture of sand is not prudent; such soil becomes too close. Sandy peat two parts, and one part sandy fibrous loam, with a fourth of silver sand, form a suitable mixture. We cannot name the plant from the fragment you sent us.

BEONIAS FROM SEED (A Young Reader).—The seed of these being very small, we should attribute the failure last year to too deep covering. Drain

the pot to one-third its depth with crocks, placing the roughest of the compost over the drainage, and fill to the rim with two parts light fibrous loam, one part sandy peat, half a part leaf soil, and a fourth of silver sand, well mixed, made fine, and sifted through a quarter-inch sieve. Make the surface even, press it gently, and water moderately. Scatter the seeds evenly, and strew a little very fine soil over the seeds. Place the pot in a hotbed at 70° to 75°, keep just moist, and shade from bright sun, so as to lessen the necessity for frequent watering, which should be done with a very fine-rosed watering-pot. The seeds of the *Echeveria* may be sown in the same way. Keep them in the hotbed near the glass, and admit a moderate amount of air; take care that the soil do not become dry, nor, on the other hand, sodden with wet; and when the seedlings can be handled pot-off singly in small pots and return to the hotbed, shading and keeping close. When they are growing freely admit air, and when the *Begonia* roots reach the sides of the pots remove the plants to a stove and encourage their growth. The *Echeverias* should be hardened well off, and removed to a greenhouse or cold frame.

FITTONIA CULTURE (O. N. S.).—They are propagated by cuttings, which strike freely throughout the summer. They should be taken off with two joints and the growing point, and the leaves should be removed from the lowest point. Insert them round the sides of a pot, or singly in the smallest size of pot, in sandy fibrous peat two parts, one part fibrous loam, and half a part each of crocks broken up small and silver sand. Insert up to the second joint, and place in a bottom heat of 75°, covering with a hand or bell-glass, and keeping close. They will soon root, and should be shifted into larger pots, or, if the plants are put round the sides of a pot, then off singly. Until established they should be kept rather warmer and closer for a time than older plants. *Fittonia argyrea*, like the *Gynnostachyum*, is grown well in pans about 6 inches deep, draining fully 2 inches deep, and spreading over the drainage a thin layer of sphagnum or rough peat; then bring the soil well up above the rim, nicely rounding it to the centre, and press gently, but not very tightly. The soil should consist of two parts sandy fibrous peat, turn up roughly, one part fibrous sandy loam also turn up roughly, half a part each charcoal, leaf soil, and crocks broken up rather small, and one-sixth of silver sand, the whole well mixed. Put in the plants, several in a pan, train the shoots over the surface, and keep regularly moist, sprinkling overhead twice a day, and affording a moist atmosphere, with shade from bright sun. It succeeds in a stove.

MIGNONETTE BOX (J. W.).—A very neat terra-cotta box 3 feet long, like



that represented in the accompanying engraving, may be obtained for 10s. or 12s., and for little more you may purchase one of a still more ornate design.

HIPPEASTRUM MACULATUM CULTURE (O. N. S.).—*Hippeastrums* are propagated by offsets, which should be taken off about this time, or when they are beginning to grow, placed in small pots, and put in a gentle bottom heat for a few weeks. In July, or when the pots are full of roots, shift the plants into 4½-inch pots, and forward them in a brisk heat, with an abundance of moisture. The plant succeeds well in a compost of fibrous yellow loam two parts, one part each leaf soil and sandy peat, with half a part of well-rotted manure, and a sixth of silver sand. Repot when the growth is at its height in June or July, or before growth takes place, in the latter case placing in a bottom heat of 75° to encourage the emission of fresh roots. Water moderately at the commencement of growth, but as this increases water very freely, and maintain a moist atmosphere, sprinkling overhead twice daily. After August, reduce the moisture and place the plants on a shelf near the glass, giving no more water than will keep them from flagging during the winter. They are stove plants. Should the leaves fall, give no water up to February, then pot and place in a hotbed.

EGG-PLANT FRUIT (A Young Reader).—The fruit of the Egg-plant is not eatable in a raw state, it is sometimes cooked. It is principally grown in this country for curiosity or ornament. The seed should be sown in a hotbed in March or April, and the plants treated as Vegetable Marrows, planting them out in a warm situation.

PELAGONIUMS TO FLOWER IN JUNE (Forest Hill).—They should not be stopped after the first week of April, but be careful about doing it then, unless the plants are very vigorous. A week earlier would be better if the plants are weak.

TEA ROSES (Torquay).—The Summer Roses on their own roots we should not trouble about budding or grafting, for it is likely they would give you endless trouble with suckers. We, therefore, advise your digging them up, trenching the ground, and manuring it well, and then planting with Perpetuals and Tea-scented Roses. They will afford you far greater satisfaction.

IXIAS AND RANUNCULUSES (Idem).—The *Ixias* will succeed in a warm border out of doors if protected from severe frosts by a mulching of leaves. The border must be light and dry, but they must be well watered in dry weather. They should in this case be planted 3 inches deep. The *Ranunculuses* should be planted about 2 inches deep in good rich loamy soil about 4 inches apart, making a drill about 2 inches deep, putting some sand at the bottom, and then placing the roots claws downwards, and pressing them about half the depth of the claws into the ground. Place a little sand over each root, and make level with soil. Water freely after they "button" or show flower. Take up after the leaves turn yellow, and after drying store away in dry sand in a cool place. The *Ranunculuses* should be planted at once. They will succeed in the place where you wish to have them. The *Ixias* should have been planted in October, or better, potted and kept in a cold frame or pit, with protection during the winter. Both are very fine. It is a pity they are so little grown.

MIGNONETTE AND STOCKS IN EARLY SUMMER (Subscriber's Gardener).—The Mignonette for May and June flowering should be sown in February on a gentle hotbed; keep the plants near the glass, and when they are large enough to handle they should be potted singly in small pots and replaced in the hotbed until they become established and have filled the pots with roots,

when they should be shifted into 4½-inch pots, and be set in a cold frame. Here they should be kept moist, and have air moderately at first, increasing it with warm weather, and hardening well off by planting-out time, when they may be put out along with other bedding plants. Some sow the seed about the middle of August in pans in a greenhouse or cold frame, potting-off when large enough, and winter on shelves in the greenhouse or in a pit secure from frost. The plants are potted in 4½-inch pots in February; in March, or early in April, they are shifted into 6-inch pots, and all the flower-spikes are pinched off up to May; they are then planted out the third week of that month in a flowering state. The Large-flowering *Pyramidalis* is the variety mostly employed. Stocks for flowering at the time you name should be sown out-doors at the middle of July, and in September should be taken up and potted singly in 3-inch pots, to be plunged to the rim in coal ashes in a frame. There they are to remain over the winter, picking-off all dead leaves or decaying parts, giving air freely in mild weather by drawing-off the lights, but replacing them when it is cold and wet; when rainy, though the lights are to be on, they should be tilted at the back. Afford the protection of mats over the lights in severe weather. In February, or as soon afterwards as the weather is favourable, shift into 4½-inch pots, returning them to the frame, but this time the plants are not to be plunged. Admit air freely, and plant out at the end of April, or earlier if mild. The Brompton in scarlet, purple, and white varieties is good, also Emperor and Intermediate in various shades of colours.

GARDEN SEAT VARNISH (M. H. M.).—Varnishes are of various colours, and are expensive to make. We advise you to buy a varnish from a painter.

TRAINING ALLAMANDAS (E. M.).—It is preferable to train these plants on balloon or other trellises, but they will succeed admirably trained to the roof, or to a trellis against the back wall of the stove. They will not flower well in the latter position if the wall be shaded much by climbers on the roof or plants in front of the wall. If not shaded they will succeed very well. We cannot tell the name of a plant from a leaf, there being so many alike.

USES OF GLASS HOUSE (A New Beginner).—Your house, when finished will be rather small for a viney, but the time at which you complete it need not interfere with your planting Vines. We suppose you will be able to plant the Vines by the end of April, having the border and all ready for them by that time. Until then we should keep the Vines plunged in sawdust or ashes under the protection of a wall or fence, procuring them now, and pruning so that they will have length of cane sufficient to reach the rafters. They will not have grown much, if at all before May, when we should plant them out, and if they have shoots 2 inches long all the better. It has been proved that Vines are quite as well planted after they have commenced to grow as when they are dormant. On turning the Vines out of the pots, disentangle the roots, spread them out, and cover with good rather fine soil, and give a moderate watering with water at a temperature of 70°. The Vines will require a year to become established. From the smallness of the house we should prefer it for Cucumber culture, and you can have plants in readiness to plant out by the time the house is finished, rearing them in a hotbed. With ordinary treatment you will have Cucumbers in about six weeks after planting, and they will continue to bear throughout the summer, or until they are replaced by plants for winter fruiting. If you have

Vines you will be able to grow plants under them, the house being available for wintering bedding Geraniums and other plants. We should, however, have Camellias. If you have Cucumbers you may grow some stove plants, but as a viney your house would be more useful for plants than if it were a Cucumber house.

HABROTHAMNIS TREATMENT (B. M. W.).—The plant should be cut down soon after flowering, and kept rather dry until it make fresh shoots an inch or two long, and then be shifted into a larger pot, and encouraged with copious waterings and a moist atmosphere. If not flowering prune now. If the plants removed are young shoots with firm wood, they will strike freely if inserted in sandy soil and placed in a gentle hotbed, shading from bright sun. The young shoots may be stopped, to give a bushy habit, but the stopping must not be practised after July, for the flowers are borne on last year's wood, on the ripening of which depends the flowering. Propagation is best effected by taking off the stubby side shoots after they become firm, but whilst the plant is in growth, inserting in sandy soil, placing in a bottom heat of 75°, either keeping close or covering with a bell-glass, and shading from bright sun until rooted.

ERICA HYEMALIS TREATMENT (Idem).—The flowering over, cut the plant back rather freely, but leave a number of young shoots. It should be pruned between the middle of March and the early part of April, and if it need a shift it should be potted again about the middle of June. Any irregularities of growth may be stopped up to the middle of July, but not afterwards. For cuttings take the points of the young shoots after they become rather firm. The short stubby shoots are the best, trim them of leaves to half the length of the cuttings, and insert them in silver sand, the cutting-pots being half-filled with drainage or crocks, and then to within half an inch of the rim with sandy peat made very fine, placing the roughest over the drainage. Surface with silver sand to the depth of fully half an inch, press firm, and give a gentle watering. Let the pots stand a few hours, then press gently, and again water; after they have stood for a night insert the cuttings round the sides and place them in a close pit or frame, covering the cuttings with a bell-glass resting on the sand just within the rim of the pot. Keep close and shaded from sun until they are rooted—this you will know by their growing freely—then admit air gradually, and pot-off before winter.

JARGONELLE PEAR TREE CANKERED (S.).—We believe the canker in your tree has arisen from the roots being in unsuitable soil; they may have penetrated into the subsoil. We would lift the tree very carefully next autumn and replant in some decayed light turfy loam. Lime in the soil will sometimes cause the trees to canker. Cut away the cankered portion and afterwards dress the wound with grafting-wax.

WHITE CYCLAMEN PERSICUM (Carolus).—If you could obtain seeds from pure white flowers, you would, doubtless, have some of the seedlings like the parent, but a large percentage would differ in colour. There have been some exceedingly fine white varieties exhibited at the metropolitan meetings recently. Snowflake exhibited last year had a first-class certificate from the Royal Horticultural Society, and White Perfection, a most superb variety, also received the highest award given by the same Society, on February 12th. It was sent by Mr. Little, of Twickenham. Any of the large seedsmen could supply you with seed.

DRESSING VINES (St. Brigid).—This may be done any time when they are at rest. A good dressing is composed of 1 oz. of soft soap, 4 ozs. of flower

of sulphur, and a small portion of soot to a quart of soft water. Add a little clay to thicken it. Apply it to the Vine with a brush, rubbing it well in.

THERMOMETER (W. K.).—Probably any mathematical instrument maker could put it right. If not you must write to the maker.

NAMES OF PLANTS (Old Subscriber).—1, *Justicia speciosa*, Roxb.; 2, *Goldfussia isophylla*, Nees; 3, *Hibbertia stricta*. (Subscriber).—1, Orchid, *Calanthe vestita*; 2, *Bilbergia*, probably *B. Leopoldii*, but synonymy is much confused; 3, Send when in flower; 4, *A. Ruscus* or *Myrsiphyllum*, but flowers are required. (M. A. N.).—We cannot name garden varieties of *Croton*, especially from a single leaf. (J. P.).—*Leucopogon lanceolatus*.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE POULTRY YARD AND THE PROFITS DERIVED FROM IT.

MR. KINARD B. EDWARDS, Sarn Fawr, Bridgend, South Wales delivered an excellent lecture on this subject before the members of the Breconshire Chamber of Agriculture. The whole lecture is well worthy of perusal, as will be judged from the following extracts:—

"That poultry is unprofitable stock I am quite ready to admit. I will go so far as to say that comparatively few poultry-keepers can be said to realise any profit worth considering, and that a large proportion keep them at a loss. But what I wish to show you is, not that poultry must necessarily be profitable, but that under certain conditions they may be made the most profitable stock connected with the farmstead; and that unless I can satisfy you that under the conditions laid down, poultry is capable of returning a very considerable profit, why then I can only advise you to keep as few as possible and not stultify yourself by keeping a lot of hungry unprofitable birds which you are ever ready to admit do not pay. An insufficient number usually is kept to make it worth the while of the farmer to give systematic attention to them. Secondly, conscious that they don't pay, they are grudging their food and are neglected; and we all know that any stock which is neglected can't pay. Thirdly, the breed of fowl kept has become degenerated by continual crossing and breeding in-and-in. The size is too small and useless as a meat-producer, and its degeneration has reduced the number of its eggs to a minimum. Fourthly, chickens are hatched at all seasons, late rather than early; and fowls are allowed to live past their profitable age, although it is well known that to produce good and profitable fowls they must be hatched early and not allowed to live beyond that age at which their profit ceases.

"We want more eggs and better fowls, and we, the British public, have a right to look to you (the farmers of Great Britain) for the supply of the eggs and poultry we are at present obliged to look abroad for. We are daily importing into this country from abroad considerably over one million and a half of eggs per day or a total of 583,000,000 in the twelve months, and millions of money are annually paid into the hands of foreigners for these articles which the British public have a right to look to you for. I have said that the degeneracy of fowls from continual crossing and breeding in-and-in has reduced the size of our fowls and reduced their egg-producing powers. In confirmation of what I say I ask you to go to any country market and purchase an average couple of fowls costing say 3s. 6d. or 4s. the couple; put them into the scales and you will find 5 lbs. will weigh down your precious birds, and it is more than probable that these birds have cost their owner every farthing he gets for them. Now let me draw your attention to what I call a fowl—a bird worthy the attention of the improving agriculturist, and one that when tried in the balance will not be found wanting. Here we have the huge Brahma cocks, Houdan and Crève hens, and Muscovy Ducks. Let me ask you to weigh these birds, and you will find the hens average 18 lbs. to 20 lbs. per couple, and the Ducks 22 lbs. per couple. Now, I ask you, what such birds are worth—honestly worth—in the market? You may say, 'Oh, 5s. the couple; 'a fowl is a fowl'—shan't give more.' I may also argue with you and say a sheep is a sheep, or a cow is a cow, and I shan't give more; and if I stubbornly refuse to give way to reason, you will find it equally difficult to prove to me that your improved breeds of sheep or oxen are better, or worth more, than the little mountain sheep or cattle. I freely admit that such large weighty fowls cost more to produce than small ones, but I assert, without fear of contradiction, that in proportion to their size and value they do not cost per lb. one-half what the small scampering denizens of the farmyard cost. Up to the age of two months the larger breeds cost but little more to rear than the smaller, and the difference of cost afterwards up to the time they are sold is not much greater. These larger breeds, such as Crèves, Brahmas, and Houdans, grow far more rapidly and fatten more freely than mongrel stock, and time is money in the poultry business as in everything else. I am quite satisfied that first-class poultry of the best improved breeds can be produced at a cost of about 4d. per lb., when everything is taken into consideration, and such meat will readily command 10d. to 1s. per lb. in the market, and if this be so can it be said there is no profit to be realised from poultry?

"We must now come to the more important consideration as to profit from the production of eggs; it is as egg-producers we must look for the chief profit from fowls. I have said degeneracy of breed lessens the egg-producing powers of the bird. I think all will admit who have given any consideration to the subject, that taking the number of fowls of all ages kept in a farmstead, the average number of eggs produced from each fowl does not exceed eighty or ninety in the year. This is the usual estimate given for mixed and crossbreeds of common fowl of all ages. Now it is well known that certain breeds lay far more eggs than other breeds; for instance, Spanish are known to lay far more than Dorkings, and Hamburgs far more than either. Keep a breed that shall lay more eggs—in fact, keep those breeds that lay most eggs. Now as egg-producers, in quantity no breed has ever exceeded the Hamburg, which will average 220 to 240 eggs from each bird in the year; Leghorns and Andalusians may average at 220; Houdans, 180 to 200; Spanish and Minorcas 200. When we compare this yield against the eighty or ninety produced by the common fowl, you will readily admit the advantages and importance, in a profitable point of view, of keeping a breed that is a known and acknowledged prolific egg-layer.

"Then again, as to the production of meat. The Houdan and Crève-Cœur are found to attain maturity very much quicker, and upon less food, than our common fowls, and the flesh is far superior. The Crève can be reared and fattened fit for table at the age of ten or eleven weeks, and far surpasses all fowls for the lightness of bone and the delicacy of its flesh, combined with considerable size, and in this respect the Houdan is little inferior to it. The Houdan is the Dorking of France, highly esteemed as a table bird, combining, as it does, considerable egg-producing powers with excellency of flesh. The Brahma Pootra, that huge Asiatic fowl, so hardy in constitution, and so well suited to our variable climate, is fast becoming a great favourite in this country, as shown by the thousands that are now annually exhibited at our poultry shows. This huge fowl attains a weight of 12 to 14 lbs. (each bird). Its chief value, however, is for crossing purposes, as it imparts to other breeds size with great constitutional powers. Such a large bird must necessarily be somewhat coarse in the bone, and owing to this it is much used for crossing with more refined breeds; by so doing its coarseness is reduced, and a superb table bird produced, combining size with quality of flesh, and plenty of it. Again, as winter layers no breed can excel the Brahmas. They are said actually to lay more eggs in the winter than in summer, and we all know the value of new laid eggs in mid-winter. Another advantage the Brahma possesses is, that by being a winter layer the hen becomes broody in the early spring, at which time chickens should be hatched, and at this time broody hens are scarce, as other breeds are then only commencing to lay, and become broody too late in the season for hatching pullets to lay through the following winter. The great size of the Brahma hen enables her to cover fifteen or sixteen eggs, and she invariably proves herself a good and careful mother.

"To make poultry really profitable, it is clearly necessary to keep a breed that arrives quickly at maturity, is easily fattened, and attains considerable size, when the production of meat is the object sought, and to gain this end it will be well to set up a stock of Crèves, Houdans, and Brahmas, and by judicious crossing you cannot fail to produce a large and profitable fowl, very little inferior in size or weight to ordinary market Turkeys. When the production of eggs is the object sought—and it is from eggs the chief profit from poultry must be sought—it is necessary that you set up a breed of prolific egg-layers, birds worthy of the name of 'every-day layers' or 'everlasting layers.' Leghorns for winter eggs and hatching your early chickens, Houdans, Houdans, Andalusians, Minorcas, Spanish, and Hamburgs, all or any of them may be kept for the unflinching production of eggs in any quantity—these breeds never desire to sit, but lay continuously until their moult. The cost of rearing a chick from the time it leaves the shell until it attains a marketable age (say fourteen to sixteen weeks) does not exceed 15d. to the farmer, as it must be remembered that he obtains their necessary food at wholesale prices. Well, at the age of sixteen weeks, you have a fowl or chicken weighing 5½ lbs., or 11 lbs. the couple; such chickens will realise over 8s. at 9d. per lb. There can be no difficulty in getting such a price, for you can yourself see the market quoted weekly, and that fine, well-fatted chickens command 1s. per lb. in most of our large towns; and poulterers are always ready to give an extra 2d. per lb. for a large well-fatted chicken in preference to smaller birds. It is, however, necessary in keeping fowls for the production of meat, to keep a sufficient number, as the trouble is much the same to rear and send six or eight dozen to market, as to send one dozen, and a small number will not pay the necessary trouble and attention.

"The cost of rearing a chick to the average laying age, say seven months, does not exceed 1s. 6d., she then commences to return a profit for her food, and during the following two years will produce: Hamburgs, 440; Houdans, Leghorns, and Andalusians, 400 eggs per bird. During these two years each bird

will cost you on an average 1d. per head per week, allowing them to be well fed. Fowls that have a good grass run, as most farmers' fowls have, can be kept in first-class condition at this cost, for it must be remembered that fowls gather a considerable quantity of food for themselves at no cost to their owner; they consume quantities of green food, such as grass, also seeds, waste grain, kernels, worms, slugs, grubs, flies, &c. Such feeding, added to the 1 lb. or 18 ozs. of grain per week, will be found ample for the largest fowls. I purchase nearly all the grain I give to my fowls at retail prices, and I find that my fowls cost me less than 1d. per week per head. Now let us come to the debtor and creditor account: Cost of rearing chick to egg-producing age, 1s. 6d.; two years' feeding at 1d. per week, 8s. 8d., total cost, 10s. 2d. To set on the credit side we have, say 440 eggs at 9d. per dozen, £1 7s. 6d.; the value of the hen killed at this age, at the rate of 4d. per lb., 2s. 6d.; total, £1 10s.; add to this the value of its manure during the two-and-a-half years (and on the value of fowl dung I shall have to say more further on), allow 1 oz. per day of dry dung to each fowl, will give 3s. 1d., at 5s. per cwt. This added to the £1 10s. brings the total to £1 13s. 4d., as the return from each fowl killed at the age of two and a half years; deduct expenses or costs incurred, 10s. 2d., and we have a nett profit from each bird of £1 3s. 2d., or over 200 per cent.

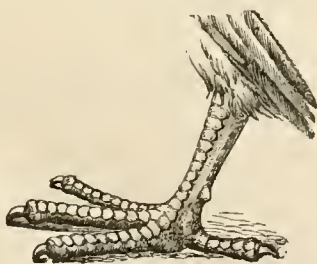
"I may mention that careful experiments have been made more than once, and which have proved that the application of 1 cwt. of fowl dung, has equally beneficial effects upon certain crops as 1 cwt. of best guano. Does not this point to the importance of economising and utilising the manure of fowls, and especially in cases where large numbers are kept? How seldom do we find the manure of fowls utilised as it should be; as a rule, they are allowed to roost about here and there, and even when confined to a hen-roost, how seldom if ever is the manure gathered and applied in any profitable way. Fowls should be provided with a comfortable hen-roost and nesting-house, and the bottom should be strewn with 2 or 3 inches of dry powdered garden mould. This is a very important matter, as the moist droppings of the fowls fall upon the dry dusty mould the latter has the effect of at once deodorising it, and keeping the house sweet.

"I beg to conclude, hoping that by drawing attention to this important though neglected branch of agricultural industry, I may induce you to give fowls a fair trial, and I also trust that I have succeeded in convincing you that although it be true that 'fowls don't pay,' it is equally true that they do pay, and that under certain specified conditions they not only pay but actually return a larger profit than that realised from any other farm stock."

BRAHMA CHARACTERISTICS.

Will you or some one publish the right standard for judging Brahmas? Or can a subscription be raised amongst amateurs to know what are the right points? I am induced to trouble you because I want to know what to breed this season, and because I, after sending birds to five shows this year, winning first at Portsmouth, first at Swansea, second at Southampton, and highly commended at Lowestoft and Wolverhampton, am now told at a sixth show that I am, so says the Rev. G. F. Hodson, disqualified because of vulture hocks. What is vulture hock? and in the interest of the fancy do kindly insert this.—HENRY FEAST.

[We reprint from a former number an illustration of the vulture hock. The vulture hock is the projection of feathers behind the knee, and inclining towards the ground. Some judges consider it a fatal defect, and we have always lamented that conclusion, for we admire such feathering, and it is usually found on fine specimens. It is very desirable that three or four absolutely required characteristics, and three or four absolutely fatal defects in each variety of poultry should be agreed to by a committee of our best judges. All minor qualifications, and that most important one, good condition, must always be left to the judges' discretion.—Eds.]



POULTRY STANDARD CHARACTERISTICS.

I AM very glad to find that exhibitors are taking up the matter of having a fixed "standard" of points, and I sincerely hope they will succeed, as I am sure one is wanted, if not by the judges, at all events by exhibitors. I for one shall be glad to

have such a standard established, and hope that secretaries and committeemen will help us by not engaging the services of those judges who decline to award the prizes by the standard. For instance, I will refer to Golden-pencilled Hamburgs, a breed which is very much on the increase, and of which I am and have been both a breeder and exhibitor. You will find some judges awarding their prizes to cocks with a bright, deep, and rich golden bay colour, and others to those of a rich deep red. Now, which of these is correct, and which are we to breed for? Next, with regard to the tails, some prefer black tails, some black edged with bronze, and some bronze. Now, what are we to do? I consider that it is now absolutely necessary that some fixed standard should be established. There is still another point, but this does not concern Hamburgs alone, and that is trimming, and more especially the combs. Are we to trim birds' combs or not? Do the judges intend to disqualify comb-trimmers? I hope they will. Now, I was at a show lately, and both first and second-prize birds were trimmed in comb, and the owners confessed it.—A HAMBURG-BREEDER.

WHO WAS THE JUDGE AT HANLEY SHOW?

Do not imagine, O ye Judge, whoever you may be, from the above heading, that a disappointed exhibitor is about to blow off his pent-up wrath through the columns of "our Journal." The question is asked for the following reasons:—There has been a great deal of correspondence and talk respecting the naming of the Judges in the prize list, so that people may know beforehand who is going to decide on the merits of their birds, and so enter or not as they think proper. While considering this a matter of indifference as a rule, believing that at all good shows the services of good judges will be secured, I do think exhibitors have a right to know who the Judges were after the Show is over. Upon receiving the catalogue of Hanley Show and finding I had won a prize, I naturally looked to see whom I had to inwardly thank for the honour so obtained, for, unfortunately, being in the far-end of the prize list, I found very little besides the honour left by the time the birds got back to Bristol. From beginning to end, however, I could not discover any official names but those of the Committee, &c., and "Veterinary Inspector." Now, why name the latter gentleman and not the Judges? Thinking the information I wanted would certainly appear after the report of the Show in the Journal, I patiently waited a week for that invaluable paper, but was again disappointed. Now, I do not suppose that the Committee of the Hanley Show had any reason for this omission, and I pen these few words more with the hope of drawing the attention of other committees to this important subject, than with any intention of finding fault. Exhibitors are a sensitive race of individuals, and everything should be avoided which would be likely to raise suspicion.—E. CAMBRIDGE.

[We have many complaints about this Show, the most serious is—"That Messrs. Hewitt and Teebay were appointed Judges, but that they both received notice three days before the Show that their services would not be required; and that a party had either all or part of his birds left in his hampers."—Eds.]

COLCHESTER POULTRY SHOW.

THIS Show was held on the 19th and 20th inst., at the Corn Exchange and Public Hall, buildings well adapted for the purpose. A very attractive prize list brought out many birds which we should have thought would have been now entirely devoted to breeding purposes.

The *Dorkings* were very good classes. Among the Greys a good pen of Darks was first, they also secured the cup; and a pen of Silvers was justly second. The Whites were all extremely good, the first-prize birds well deserving the admiration they received. The *Cochin* entries were few in the Buffs; the third-prize pen of Lady Gwyder's contained some good-shaped birds, but they were a little faulty in colour, otherwise they would have secured the best position. *Cochins*, any other variety, comprised only three entries. The first-prize pen, a pair of Whites from Mr. Woodgate were good, but the hen was a little out of condition. The Dark *Brahmas* contained twelve entries. The first and second prizes went to some healthy-looking birds, but we should have much preferred the third-prize pen had the birds been in condition, but they showed such signs of overwork, that we were pleased to see them superseded, as we think they have brought sufficient honours to their owner's yard to deserve a little rest; and if this warning is not accepted the owner will have no right to complain, if, on the next occasion, they are passed without notice. The Light *Brahmas* were a miserable collection. Among the *Spanish* were some first-class birds, the winners being in fine condition. A good pen of Mr. Jackson's arrived too late for competition, otherwise they would probably have secured a place. The *Game* classes contained some handsome birds, the Reds being shown together; all the prizes went to the Browns. The first-prize pen of Mr. Foster's we have before had occasion to notice, and the birds

TRUMPETERS.—*New Type*.—1, 2, and c, R. Fulton. 3, C. L. Gilbert. *vhe*, J. Bailey, jun. *hc*, W. Harvey (2). *Old Type*.—1, W. Gamon. 2, R. Fulton. 3, W. Harvey. *vhe*, W. Harvey; H. Yardley. *hc*, W. Harvey; J. Armistead. c, G. J. Taylor.

JACOBINS.—1 and 2, R. Fulton. 3, R. Wade. *vhe*, J. Thompson. *hc*, R. Fulton; R. Wade; G. J. Taylor. c, R. Fulton; G. H. Greaves.

FANTAILS.—1, H. Yardley. 2 and 3, J. F. Loversidge. *vhe*, J. W. Edges. *hc*, W. Brydode. c, G. J. Taylor.

TURBIDS.—1, R. Fulton. 2, J. E. Mason. 3, W. Harvey. *hc*, J. E. Mason; Clayton & Birstow; R. Fulton (2). c, G. J. Taylor; G. Fletcher.

DRAGONS.—*Blue or Silver*.—1, W. H. Mitchell. 2, W. Gamon. 3, J. E. Mason. *vhe*, G. J. Taylor; R. Fulton; J. Watts; E. C. Stretch; W. Bishop. *hc*, J. Watts. c, Ward & Rhodes (2); W. H. Mitchell (2); G. J. Taylor; Clayton and Birstow; R. Brierley; H. G. Poole. *Any other colour*.—1 and *vhe*, W. Bishop. 2 and 3, F. Graham. c, G. J. Taylor; H. Yardley.

ANTWERPS.—*Short-faced*.—1, W. Gamon. 2 and 3, H. R. Wright. *vhe*, H. R. Wright (3). *hc*, D. Riddihough, jun.; W. Gamon (2); J. W. Collinson. c, R. Fulton; W. Harvey; W. Gamon. *Hens*.—1, H. R. Wright. 2, C. F. Copeman. 3, W. Gamon. *vhe*, W. Gamon (2); H. Yardley.

ANTWERPS.—*Working, or Messenger Pigeons.*—*Cocks*.—1, D. Riddihough, jun. 2, H. Jennings. 3, A. Webster, jun. *vhe*, H. Jennings (2); D. Riddihough, jun.; A. Webster, jun. (2); J. J. Sparrow; F. Foster (2); J. W. Collinson (2); E. Beldon; C. F. England; R. Chadwick. *hc*, R. Pratt. c, D. Riddihough, jun.; J. J. Sparrow; K. Pritchard. *Hens*.—1, H. Jennings. 2, J. Bishop. 3, D. Riddihough, jun. *vhe*, D. Riddihough, jun. (2); A. Webster, jun. *hc*, H. Jennings; T. Foster. c, G. J. Taylor; H. W. Illingworth; R. Pritchard; J. W. Collinson.

ANY OTHER VARIETY.—*Cnp*, W. Harvey. 2, G. E. Sawdon. 3, J. Baily, jun. *vhe*, J. Baily, jun. (2); J. Watts (Dentellette and Nun); W. Harvey; H. Yardley (2). *hc*, G. J. Taylor; W. Harvey; H. Yardley. c, J. Baily, jun. (3); M. Ord; W. Harvey; T. Gamon.

SELLING CLASS.—*Price not to exceed £2.*—*Single Birds*.—1, J. H. Harland (Carrier). 2, H. B. Hanson (Pouter). 3, H. Adama. *vhe*, R. Fulton (Barb); Hinchcliffe & Holt. *hc*, W. Binns (Carrier); G. J. Taylor; W. Harvey. c, R. Fulton (Carrier); W. Harvey.

SELLING CLASS.—*Price not to exceed £3.*—*Pairs*.—1, W. Harvey. 2, J. W. Townsend (Owl). 3, J. Watts (Carrier). *vhe*, R. Wade; H. Yardley. *hc*, J. Watts (Barbs); W. Harvey; H. B. Hanson; G. J. Taylor (Turbitis). c, R. Fulton (Pouters); W. Harvey.

JUDGES.—Mr. H. Allson, Spencer Street, Birmingham; Mr. W. Cannan, Bradford; Mr. J. Crossland, 1, Mark Street, Wakefield; Mr. H. Smith, Skipton.

CARRIER AND SHORT-FACED PIGEONS.

DOUBTLESS many of your readers will remember that in March last year we drew attention to a private exhibition of Carrier Pigeons, the property of a veteran fancier, Mr. Siddons, sen., of Birmingham. The treat then afforded, together with the enjoyable reunion of the fanciers of the district, led to the holding of a second Exhibition on Thursday last in the large Club-room of the Victoria Inn, Lichfield Road, Aston, the residence of Mr. John Siddons, and it was, if anything, even more enjoyable than its predecessor. Nearly fifty birds of Blacks, Duns, and Blues were caged, constituting one of the finest displays of this noble variety we have seen for some time. We pointed out last year that the chief characteristics of Mr. Siddons' birds lay in their nearer approach to the type of the fine old English bird than most strains. They were all of good carriage, with long thin necks, good eye, and narrow skulls. They were all that could be desired, and were all shown in faultless condition. Mr. Siddons is, perhaps, the oldest Carrier-fancier living, having exceeded three-score-and-ten years, and has never been without his pets for upwards of half a century. Hale and hearty on Thursday, he went over his feathered favourites with his numerous visitors, evincing a zeal and love for them which many a young fancier will long remember, chatting of old times and celebrated fanciers now no more.

Mr. Siddons wishing once more to see the two extremes in the fancy side by side, requested Mr. Hallam, of The Lozells, Birmingham, to show a few pens of Short-faces. This gentleman complied by showing twenty such specimens, consisting of Almonds, Agates, Wholefeathers, and Kites, as are seldom seen. They were all good in skull, beak, carriage, and marking, and were shown in that faultless condition which can only be obtained in this variety when they are not sent from exhibition to exhibition.

We understand there was a wish expressed that this pleasant gathering should be looked upon as annual amongst the fanciers of this district. As there is every probability of such being the case, Pouters will be represented from some well-known lofts, then the three high-class and English manufactured varieties will be brought together. It is only fair to add that Mr. Yardley, of the Market Hall, gratuitously provided the cages.

PIGEON TOURNAMENT.

MANCHESTER COLUMBARIANS throw down the gauntlet to London Peristerionics. For some few years there has been a Columbarian Society in Manchester entitled the Northern Counties Columbarian Society, and the Society has gone on increasing till they have about forty members. Many of the members never exhibit except at columbarian meetings, and now, as a Society, have challenged the National Peristerionic Society—not for money, but for honour. As the Columbarians have thrown down the gauntlet, according to the courtesy of chivalry the first year the Peristerionics must go to Manchester, afterwards the Columbarians must come to London, and turn and turn about. The Columbarians do not stipulate conditions, but

merely issue the challenge. The conditions suggested are open to revision. They are as follows:—

RULES.

1. That the competition be held in Manchester, and take place during the month of November.

2. That each Society appoint one judge, and a referee be appointed by the judges. Neither the referee nor judges to be members of either Society, and they must not reside within fifty miles of London or Manchester.

3. That the birds to compete be divided into the following classes:—

CLASSIFICATION.

Carrier Cock, Blue.	Jacobine, Cock, Yellow.
" Dun.	Hen, Black.
" Black.	" Red.
Hen, Blue.	" Yellow.
" Dun.	Turbite, Cock, Blue or Silver.
" Black.	" Red or Yellow.
Tumblers (Short-faced), Cock, Any	" Any other colour.
variety except Balds or Beards.	Hen, Blue or Silver.
Tumblers (Short-faced), Hen, Any	" Red or Yellow.
variety except Balds or Beards.	" Any other colour.
Tumblers (Short-faced), Cock, Bald	Antwerps (Short-faced), Cock, Blue.
or Beard.	Antwerps (Short-faced), Cock, Silver
Tumblers (Short-faced), Hen, Bald	Dun.
or Beard.	Antwerps (Short-faced), Cock, Any
Barbs, Cock, Black or Dun.	other colour.
" Any other Colour.	Antwerps (Short-faced), Hen, Blue.
Hen, Black or Dun.	Antwerps (Short-faced), Hen, Silver
" Any other Colour.	Dun.
Dragons, Cock, Blue.	Antwerps (Short-faced), Hen, Any
" Red or Yellow.	other colour.
" Any other Colour.	Antwerps (Long-faced), Cock, Blue.
Hen, Blue.	Antwerps (Long-faced), Cock, Silver
" Red or Yellow.	Dun.
" Any other colour.	Antwerps (Long-faced), Cock, Any
Foreign Owls, Cock, White.	other colour.
" Any other colour.	Antwerps (Long-faced), Hen, Blue.
Hen, White.	Antwerps (Long-faced), Hen, Silver
" Any other colour.	Dun.
English Owls, Cock, Blue.	Antwerps (Long-faced), Hen, Any
" Silver.	other colour.
" Any other colour.	Tumblers (Long-faced), Cock, Mottles
Hen, Blue.	or Self-colour.
" Silver.	Tumblers (Long-faced), Cock, Balds
" Any other colour.	or Beards.
Fantails, Cock, White.	Tumblers (Long-faced), Hen, Mottles
" Any other colour.	or Self-colour.
Hen, White.	Tumblers (Long-faced), Hen, Balds
" Any other colour.	or Beards.
Jacobins, Cock, Black.	Any other variety, Cock.
" Red.	Hen.

—(Signed), ERNEST E. M. ROYDS, *President of the Society.*

PORTSMOUTH ORNITHOLOGICAL SOCIETY'S SHOW.

THE collection consisted not only of poultry and Pigeons, but also Pheasants, Cage Birds, and Rabbits. There was likewise a show of Cats. The whole were exhibited in Billett's pens.

Game fowls headed the list, and mustered only ten pens in two classes, eight being Reds. The Variety class contained one pen of Duckwings and one of Whites, both the property of the same exhibitor. If we except the first and second-prize pens in the first-named class, there was no particular merit. Buff *Cochins* mustered well; the first-prize pens well deserved their position. The *Brahmas* were certainly the best represented varieties in the Show, the Light being particularly good. There were two cups to compete for, one for the best pen of chickens, the other for the adults. For the first-named Mrs. Williamson was deservedly successful, Mr. Maynard carrying off that for old birds with a grand pen. In *Dorkings* the first prize went to a good pen of Whites. *Andalusians*, a breed strong in the locality, were a capital class. The *Hamburghs*, with few exceptions, were indifferent. *Polands* were unusually good, the first-prize White-crested stock particularly so. *French* were weak. The Variety class contained many birds of great merit, every pen except one being noticed by the Judges. *Bantams* were for the most part not of first-rate quality. *Rouens* were certainly the best of the *Ducks*, the other two classes containing only three pens each. *Geese*, although a cup was offered specially for them, were represented by two pens only. *Turkeys* were good. The Selling classes were strong, and many good pens were claimed.

Pigeons had only seven classes besides the Selling class; amongst them were some good Carriers, Barbs, Fantails, and Tumblers. The Selling class also contained many good birds.

Every attention was paid to the comfort and safety of the birds by the Committee.

Amongst the *Rabbits* were many first-rate specimens, and the classes were well filled.

We published the prize list last week.

[We extract the following from a Portsmouth correspondent's letter.—]

"The general arrangements were tolerably good, but one thing, I think, must have occurred to any casual observer as being decidedly wrong—namely, placing the Cats over the pens of poultry, and these actually White *Cochins* and Light *Brahmas*.

Doubtless some of the exhibitors will be wondering what is the matter with their specimens when received home, but they will no longer wonder when they learn their relative position to the Cats at the Show. More injudicious placing it is scarcely possible to conceive, as I think all will agree that if Cats are to be shown with poultry at all, they ought never to be placed above them. I contend that Cats have no right in a poultry exhibition, and this opinion was considerably strengthened as I passed up the tier of Cats, and to speak plainly I was glad to get away from them again."

BEE-DOMICILES, AND BEE SYSTEMS OF MANAGEMENT.

YOUR esteemed correspondent, "A RENFREWSHIRE BEE-KEEPER," does not appear to be a bit more enlightened regarding the views I incidentally expressed in a recent communication on the past bee season, notwithstanding that I again laid before him the entire passage for his reconsideration and reflection. I said it was a prevailing error among inexperienced apirians to look for honey results or amount of stores in virtue of the kind of hive used, instead of the productiveness of the season and locality. In this I was borne out, not only by my own experience, but by the testimony of most of our more esteemed bee writers; and it will not do for "A RENFREWSHIRE BEE-KEEPER" to ignore this testimony on the ground that some crude theorists, with defective knowledge themselves, are apt to repeat errors which, however, have no place in our standard works. Whatever defects, therefore, there may be in our bee literature, it is most assuredly not on the point disputed by your correspondent.

I am still of opinion, however, that "A RENFREWSHIRE BEE-KEEPER" has, by some confusion of ideas, failed to interpret aright the views I expressed so plainly in the paragraph referred to, and that this failure, as it appears to me, arises chiefly by his confounding two things as one and the same, which are entirely distinct and different—namely, in speaking of bee-domiciles and bee systems of management as synonymous. The Stewarton hive surely is not synonymous with the Stewarton system, the swarming with the non-swarming system, or the storifying system with the collateral system; and with reference to modern and antiquated hives and systems, I have still to repeat the question put to "A RENFREWSHIRE BEE-KEEPER" to explain to me what really constitutes in his estimation the Stewarton system as a modern system, and as distinguished from all other or former systems of bee-management.

In my remarks, to which exception was taken, I alluded to no systems of bee management whatever, far less did I pronounce an opinion upon their respective merits. I did not even give an opinion as to the comparative merits or utility of any hive as a bee-domicile. I had no such objects in view. They were foreign to my purpose. All I wished to show was that so far as "honey results" or amount of stores were concerned, the hive, *qua* the hive, had little or no influence. When "A RENFREWSHIRE BEE-KEEPER," therefore, tells the readers of the Journal that I consider all hives alike in utility, and all systems of bee-management the same in value, it is an assertion as erroneous as it is unwarrantable, for there is no ground for it in the paragraph referred to.

A similar confusion of ideas appears to me to prevail in the illustrations given by your correspondent in the number of the 16th January in continuation of the same subject—regarding the quality of honey in different hives. Reference is there made to the superior staples produced in certain manufactories, in virtue of modern improvements introduced, and the skill of the manufacturers. I am aware it is even so, but neither the Manchester cotton manufactory and manufacturers, nor the Clyde sugar refinery and refiners referred to, is an apt analogy to the bee hive and its workers. The bee-domicile is neither the manufactory nor the refinery, for the manufactories and manufacturers are both extraneous to it. Both are far removed—away among the sweet-scented pasture-leas of white clover, or by the sunny slopes of the purpled heath-clad hills. It is there that the bee-manufacturers and manufacturers may be found, while the hive itself, in whatsoever way improved by modern inventions, is but the simple storehouse in which the completed production is deposited. The whole arguments thus put forward by your esteemed correspondent in support of his hypothesis dissipate on close inspection like the baseless fabric of a vision, or topple down like the unstable edifice of a castle of cards.

Now, let me take leave to draw the attention of your apirian readers to the proposition of Mr. Pettigrew—of testing the value of different kinds of hives. The method suggested by him is to place a certain number of peopled hives in the same garden from "March till September—that is, during the season of honey gathering, and all managed alike on the swarming or non-swarming system," and the results would, according to his opinion and belief, settle at once and for ever "fairly and satisfactorily" the question, "Which kind of hive is best?" and, as a consequence, "the country would be ultimately enriched." If such a happy

and beneficial result could in my opinion be obtained by Mr. Pettigrew's proposition, I should willingly lend my helping hand in carrying out all necessary arrangements; but I quite agree with your excellent contributor "B. & W.," that no satisfactory results could possibly be obtained from such a method of test; indeed it would be no test at all, for the proposition itself appears to me to be both wrong in its conception, and impracticable in its very nature. In the first place, who is to determine that these different kinds of peopled hives are all started in March under equally favourable circumstances or conditions as to stores, population, brood, and queen? This difficulty surmounted, the conditions of equality in March disappear entirely, it may be, in April; and ere the swarming or honey season come round, the dissimilarity in point of prosperity becomes every day only the more manifest; and all this, be it remembered, quite irrespective of any influence, it may be, of the particular kind of hive. It is evident that the results in such a case, whatever they may be, would determine nothing. In short, it would require repeated trials or tests to establish—I do not say a principle, but to approximate to a principle. But what is the principle or object desiderated by the proposed "test?" Mr. Pettigrew answers, "The best hive." Best for what? "Best for swarming, and best for non-swarming purposes." Well, supposing the point gained, which is the best for swarming, another question would still remain behind. Is the best hive for swarming the "best hive?" Is "best" applied in reference to the multiplication of swarms only, and with no reference to the increase of stores? Again, Is the best hive for non-swarming purposes the "best hive?" Is "best" applied to the prevention of swarms, and the increase of stores, but with no reference to the increase of stocks? Then again, should all this be settled satisfactorily, a further question would crop up—the old knotty question, Whether is the swarming or non-swarming system the "best?" But now I am going "beyond the record," I am getting into the consideration of the best "systems," and not the best "hives;" and I must pause.

In conclusion, let me be permitted, in illustration of my own views in reference to this subject, especially as to the alleged effect of hive influence on "honey results," to say a few words in point for the benefit of all whom it may concern. Let us suppose, however, we take a more practicable method than that proposed by Mr. Pettigrew in endeavouring to set this question at rest. Suppose, then, we send into the bee garden in any given locality six different kinds of hives in swarming-time, all peopled simultaneously by prime swarms of equal weight or numbers. "A RENFREWSHIRE BEE-KEEPER" will, I fancy, send his contribution in the shape of an octagon Stewarton hive, on the assumption, of course, that in virtue of something or other in the form, construction, or material of the hive, the amount of honey stored will at the close of the season be larger than in any other hive. Mr. Pettigrew, on the same principle, sends in his capacious straw, believing also, I reckon, upon the same grounds, that he will have no difficulty in coming off victorious. John Chinaman, the "RENFREWSHIRE BEE-KEEPER's" acquaintance, sends in his "old orthodox straw" (one of "proper dimensions," however), nothing daunted by the ill-disguised smiles of the "modern" competitors. Mr. C. N. Abbot, Bee-master, Hanwell, also, we shall suppose, sends in his "moveable bar-frame hive," alluded to in his communication in the number of the Journal for February 6th. Mr. Abbot does not say whether it is a Dzierzon, a Baron von Berlepsch, a De Bouvois, a Bevan, a Taylor, a Tegetmeier, a Woodbury, or even a Langstroth frame hive, with its sixty-one points of excellence. All minor differences are, I reckon, of little moment in his estimation, provided it is a "moveable bar-frame hive." The whole virtue consists, apparently, in the principle of bars and frames, and in virtue of which he confidently believes his hive will compete successfully in point of honey stores, more particularly with hives such as Mr. Pettigrew's straw, whose damaging point is the "fixity of the combs." I also send in two hives to make up the six, and by way of contrast, not, however, for competition, but for reasons to be explained afterwards. Well, one of the hives I send is what I dignify by the name of my "palace hive," it being a most expensively-constructed octagon, made of polished mahogany, with vertical frames in two divisions, also of mahogany; so also are all its appurtenances, with its massive ornamental octagon cover. In each of the eight panels is a glass window with shutters, which have brass hinges and knobs, and which are shut by brass catches. The hive altogether is most unique and ornamental, and if cost of material and expense of construction have any influence on "honey results," I should fancy I have it here. Along with this beautiful and highly ornamental "palace hive" I send also, by permission, a common "tea-chest," not of the largest size, but one of "proper dimensions." Now, all these six hives (tea-chest included) are fairly peopled alike by prime swarms. The start is made, we shall suppose, about the end of May. So at it they all go, "A RENFREWSHIRE BEE-KEEPER's" Stewarton, with its bars, slides, &c.; Mr. Pettigrew's capacious straw, 21 inches by 12; Mr. Chinaman's "old orthodox straw," not forgetting the "hackle;" Mr. C. N. Abbot's

moveable bar-frame hive, "unencumbered by all fixtures;" and lastly, my splendid "palace hive" and the said "tea-chest." Well, at they go, till the much-coveted golden-coloured turnip flowers, the well-loved wild yellow mustard, the sweet-scented white clover, and the rich purple heath, all in succession yield up in no stinted measure their nectar stores; and now September comes, the judges and competitors in due course convene to know the "honey results." The different hives are carefully examined, weighed, and tested, and their nett honey-gains ascertained. There is a buzz within and a buzz without the hives. The judges have decided, and the competitors are anxiously waiting for the verdict. It is announced. Hear it, ye incredulous! The tea-chest is declared the winner, No. 1; John Chinaman's old orthodox, No. 2; Mr. Pettigrew's capacious straw, No. 3; Mr. Abbot's "bar-frame," No. 4; "A RENFREWSHIRE BEE-KEEPER'S" Stewarton and my palace hive are declared equal.

Now, if such supposed results were to occur in a real trial of the kind proposed, and the same duly chronicled as proposed in the pages of *THE JOURNAL OF HORTICULTURE* for the edification of the whole bee world, what a rush, might we not imagine, of apiarians to bee-dealers' warehouses for a supply for the "*ne plus ultra* hive" at last. No such thing. The idea is too preposterous to entertain for a moment. If such a result, I repeat, might occur in a real trial of the kind proposed, and there is no proper reason to urge to the contrary, then I call upon intelligent apiarians to say if any principle could be established by it, so far as good, better, best hive is concerned. Would it convince even the competitors who relied upon it? Certainly not. As your excellent correspondent "B. & W." truly indicated, they would be the first to demur, and to plead some reason or another to account for it. The consequence would be that new trials would be proposed and carried out, only to give rise to new enigmas and fresh complications in the shape of ever-varying results, until after repeated tests the most sceptical would come to see that unimportant differences in the hive itself had no perceptible or real influence on honey results. The truth of the matter is simply this:—First, that honey results are determined by the season and locality, and not by the peculiar hive; and second, that in the same season and locality differences in honey results in different hives, as a rule, will be determined or accounted for, not by the difference of hive, but by a difference in the state and condition of its population. And further, we must neither, on the one hand, ascribe the failure of honey supplies in a bad season or locality to the kind of hive, nor, on the other hand, ascribe to the same cause the merit of large honey supplies in seasons and localities of an opposite or favourable character.—J. LOWE.

HONEY HARVEST—UNITING SWARMS.

YOUR readers may like to hear what my honey harvest for 1872 has been, and the result of uniting swarms by the Scotch plan, which I have practised successfully for more than a dozen times without a failure, except in one case in which the matter was complicated by the presence of brood.

In the autumn of 1871 I put up five depriving stocks, of which one was a collateral hive, and two were common straw butts, one of the latter being very weak. These lived through the winter. Supers were added in due course, but on the 21st of June the strongest hive swarmed after having two-thirds filled its box. On the same day one of the common hives swarmed. Not to be done out of the super, I united the two swarms which were both very large. In five days the bees had nearly filled a tolerably large stock-hive with combs. I then put on a 30-lb. box and presently eked it, afterwards giving an eke with bars.

From the top division, on account of brood, I had to cut out what would have been 12 lbs. of comb, but obtained in the barred eke enough to make a super of 45 lbs. nett; pretty well, I think, from a stock hived on the 21st of June of the same year. The stock hive was left light, it is true, but by giving just the honey cut out of the top super, it was put up for the winter with 27 lbs. inside contents.

No. 2, a depriving hive, did not swarm, but was doing so little, that when on the 11th of July the weak straw hive swarmed, I joined the swarm to it. This set the bees to work with a will, so that they nearly filled a 20-lb. super. I then removed the slides in its top, and put on that large super that had been deserted by the bees of No. 1, and which was two-thirds full. This they finished, so that I obtained a super of 48 lbs. nett. weight, more than half being their own work.

No. 3, depriving hive, after two-thirds filling a 20-lb. box swarmed on the 19th July. This swarm I joined with another which came two days after, and put them in an octagon box, and although so late in the season the bees collected 28 lbs. inside by the 7th of August. When the collateral hive swarmed, the bees left 10 lbs. of sealed comb in a side box. A swarm from some hive, I forget which, was placed in a very large straw butt some time in July, a second swarm being joined to it a day or two after. An eke was given. This I broke up, and including

two large side combs fit for table, I obtained from it 36 lbs. of honey.

Altogether results, after four out of five of the depriving hives had swarmed, were 128 lbs. of comb, and 50 lbs. of drained honey, that not being included which was returned to the stock as before mentioned.

To explain my mode of manipulation, I may state in general terms that the Scotch plan of uniting bees is to have a box of the same diameter as the stock hive, with bars and slides on the top, large enough to contain a swarm. The latter being hived in this, a little smoke is puffed into both at dusk, and the box placed beneath the stock. The slides are then quietly withdrawn, and the box left to form part of the stock hive, which suits the Stewarton arrangement. I had used this plan for some years with unvarying success either to unite weak stocks in spring by joining together the upper boxes of each, or to unite autumn-driven stocks to others, in which case the box was taken away at the end of twenty-four hours, without having learned that it was ever used to join fresh swarms to obtain supers the first year; and when I did learn the plan it appeared to be useless for the hives I was then using, which were octagonal, 9 inches in depth, containing about 1450 cubic inches, for I had discarded the Ayrshire arrangement as being unsuitable for this country, South Wales. The method of uniting appeared to be inapplicable for my hives, as they seemed incapable of holding two strong swarms at once. Presently it occurred to me that by a modification of the plan it might be made applicable to all hives. I therefore left the uniting box below until the box above, the permanent one, was filled with combs, then puffing a little rag smoke into both boxes, the uniting box with the bees in it was removed and placed on a stool on one side of the entrance, in such a way that the bees might have an easy path to run in. A large super was at once put on. As the bees entered the stock hive those above crowded into the super, which they quickly filled. This year the results have been as I have detailed. I find it to be desirable that before the lower box is withdrawn and a super placed on the stock, the latter should be quite full of combs.

In conclusion, I may state that I find myself to be the only bee-keeper in this district who has had a good harvest. In all cases but one it was an absolute failure. The exception was owing altogether to the union of swarms.—A. B., *Caermarthen-shire*.

WHICH KIND OF HIVE IS BEST?

I HAVE just now read Mr. Abbot's letter on this subject. Readers of the Journal will remember my saying that a contest between A and B would settle nothing, and that a contest, if it could be arranged, should include five or six popular kinds of hives. Hence proposals, fair and comprehensive, were offered for consideration. Without finding fault with these proposals, Mr. Abbot appears with a new set of tests—all his own. The trials which he proposes must come off or take place near the dwelling places of the owners of the hives. "No person to be allowed to interfere or in any way assist the owner. Each party to be at liberty to use all and every means in his power to develop the advantages of his hives." At the close of his letter Mr. Abbot intimates his determination not to enter on a contest if the full management of his hives be not left in his own hands. Mr. Abbot appears to have far more confidence in his power of management than he has in his hives. I myself would exclude the owners from interfering with or going near their hives during the season of trial; for it is not a question of good management, or good nursing, or clever trickery. If a hundred trials such as Mr. Abbot has proposed were to come off, they would not touch or settle the question at the top of this letter.

And now let me inform the reader that I once before met Mr. Abbot; and had he not come a long way out of his road to meet me, I should probably never have had the good luck to know anything at all about him. Some three months ago he made and published in the pages of *The English Mechanic* the following remarks:—"Mr. P.'s last remark is not quite clear. What does he mean by Mr. Pettigrew's system? I never knew Mr. Pettigrew had adopted anything new in bee-keeping to identify him with any system at all, unless it be one of retrogression. Mr. Pettigrew's book is simply a defence of everything that is old in bee-keeping, and a railing against everything that is new." If that be a system, doubtless Mr. Pettigrew has many admirers. If bee-keepers will get up a discussion on the relative merits of the bar-frame hive and Ligurian bees—*à la* Langstroth, as against the old black bees in straw skeps, and the sulphur pit—*à la* Pettigrew, I shall be quite willing to enter the lists, and stand by Langstroth.—C. W. ANNOT, *Hanwell*." A gentleman who is guided in the management of his bees by my "Handy Book" extracted the above from *The English Mechanic*, and sent it to me with a letter, in which he said it is "a tit bit," especially "the sulphur pit—*à la* Pettigrew." If it would not vex our excellent friend Mr. Abbot too much, I would venture to tell him that the book he so loudly condemns has already saved more bees from the sulphur pit than all other works, ancient and modern,

published in this country. Perhaps he was asleep when he read the book; if not, methinks he would do well to cultivate and develop the nobility, the generosity, and the manliness of his own nature, and for his own good acknowledge that he forgot himself in publishing these misrepresentations. Such misrepresentations never annoy me; indeed I should not have noticed them now, but for the hope that the readers of the Journal will heartily excuse me if I decline to notice in future anything that Mr. Abbot may say.—A. PETTIGREW, *Salé, Manchester.*

OUR LETTER BOX.

ST. AUSTELL POULTRY SHOW (*Three Correspondents*).—We are indebted to you all for prize-lists, but as it was not advertised we conclude that it was merely a local show.

HANLEY SHOW.—The second prize in the selling class was awarded to "T. Sisney," not "T. Gisney," as stated.

GOLDEN-PENCILLED HAMBURGS (*Torquay*).—It is not always found that the very high bred birds are the most prolific, but you should have eggs now. Hamburgs do not lay at five months old. It is rare for even the most precocious birds of breeds more celebrated for early laying to do so. Cochins and Brahmas lay earlier than Hamburgs, and are both harder. They are far more useful fowls than the others. Where only one breed is kept we advise Brahmas; they are hardy, good layers, and good mothers. Cochins will do as well, but they cannot be bred so exactly alike as the Brahmas. Birds at liberty do not want chopped meat, scalded barley, or chopped mangold and cabbage. You have taken unusual and unnecessary trouble and may well be sick of them. Where fowls are kept entirely in an artificial state, lacking many things that they find in a state of nature, pains must be taken to supply that which they lack, but where they have a run on grass, among trees, and in a stable yard, all they require is to be fed on meal morning and evening, with a little whole corn at mid-day. Do this, substitute Brahmas for Hamburgs, and we will promise you plenty of eggs, and you shall not be sick of your fowls.

DUBBING GAME COCKS (*N. H. T.*).—The comb, gills, and deaf ears should be removed in dubbing, and they cannot be cut too closely, but that causes no dis-sight, and cannot by any means be called a mutilation. There is one accepted dubbing, it includes all that is necessary, taking away all spare skin and flesh. It was originally done to give no hold for an adversary in the pit. More than this is unnecessary, and would disfigure the bird, nor can we understand why more should be done.

VARIOUS (*G. Spencer*).—It is too early in the year to complain that a hen does not lay; the weather has also been unfavourable for it. The non-sitting breeds are all subject to disease of the egg organs, and do not last so long as those that rest while they are hatching and rearing a family. Spanish are especially subject to a disease which fills up and hardens the abdomen. Inconvenienced by this, they constantly run to the nest in hope of getting rid of the load, but in vain. The disease is hopelessly incurable, and every grain such a bird eats is wasted. Examine her carefully, there may be distention, but if it yield to the pressure of a finger it is not chronic disease, but may be a mere passing indisposition; if, however, it is filled in so hard as to resist close pressure, there is no hope. You were too venturesome with your chickens. They require shelter in such weather as we have had for a month. The chicken died of chill and cramp, brought on by exposure. Keep them in-doors, in some outhouse, and feed them well. Give them plenty of bread and ale, it will stimulate them, and you will perhaps save the rest. It is a great convenience to have a barn or outhouse where you can put the hen under her rip, and allow the chickens to run in and out through the bars. Supplied with grit, fresh sods of grass, and well fed, she will rear all her chickens till the weather permits of their being put out without injury. No one can be relied to fully when they mix questions of various departments.

AYLESBURY DRAKE (*H. G. M.*).—We fear your case is a bad one, a Duck has no crop. It has a gullet that conveys food to the gizzard, and from your description we fear there is either inflammation or ulceration. Either will end fatally. There is no method of physicking Ducks, nor are there known remedies for their disorders.

SOFT EGG (*J. Phillips*).—Let the hen have a heap of dust, a mixture of bricklayers' rubbish and coal ashes. Feed her on barley meal instead of whole corn, and give her grass and lettuce leaves.

BIRDLINE (*Idem*).—To make it from holly bark is tedious. Indian rubber or gutta percha dissolved in naphtha makes it speedily, and the German method of preparing birdline is by putting about 2 lbs. of linseed oil into a pot, to simmer upon the fire for some time, after which it is taken off, and lighted with a match. In this state of inflammation it continues about two hours, when half the quantity will be consumed. By dipping, from time to time, a stick into the oil, and trying the matter between the fingers, its proper glutinous consistence may easily be ascertained; on which the pot is covered, and the flame extinguished.

DISPUTE (*G. & J. D. v. F. P.*).—A County Court Judge would at once decide that the full amount claimed by "G. & J. D." should be paid to them by "F. P." If "G. & J. D." think the birds died without any neglect of "F. P." or others in whose charge he left the Hamburgs, then "G. & J. D." might graciously allow a small deduction from the amount claimed.

CLAIMING EXHIBITED FOWLS (*C. J. M. M.*).—As the rule of the Society stipulates that no person be allowed to claim until four o'clock, we consider that the Steward and Secretary were wrong in allowing letters claiming to have precedence either before that hour, or before persons personally present.

PHOTOGRAPHING PIGEONS (*Y. S.*).—Apply to a photographer. PIGEONS (*J. H. B.*).—There is no objection to letting-out the Tumblers. As to other queries you must consult our "Pigeon Book." You can have it free by post from our office if you enclose 1s. 7d. in postage stamps with your address.

RING DOVES (*A. F. N.*).—They are quite hardy enough to live in your dovecote. The same food as for the Pigeon is sufficient, but unless brought up in confinement we fear they will fail.

HIVES (*C. T. P.*).—Write to Mr. Pettitt or Messrs. Neighbour for information about Payne's hive. It is impossible to say which hive is "best," tastes and needs differ.

STEWARTON HIVES.—"A Subscriber" will feel greatly obliged by a "RENFREWSHIRE BEE-KEEPER" describing in detail his mode of management of the Stewarton hives.

BOTTLING MEAD (*Amateur*).—It may be bottled at the end of six months from the time of making. If drawn off carefully it will not need fining.

VARIOUS (*A New Subscriber*).—You had better allow your stocks in the common hives to swarm naturally, and have the swarms in your boxes. Unless you like to adopt the frame hive, we do not know that you can do better than with the bar hives you have made, provided that you have adopted the proper distance between the centre of each bar. The size of the boxes will do very well. It will be of no use your attempting anything with nucleus boxes unless you follow the system of frame hives in its entirety. Perhaps our little manual, "Bee-keeping for the Many" (which may be obtained at our office for five stamps) will supply you with much of the information you desire. How long a queen bee will breed during the season depends on too many contingencies to answer decidedly. Breeding sometimes commences in January, and may last till the end of September, but it is rare that a queen will breed during the whole of this time.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		A.M.				IN THE DAY.						Rain.
1873. Feb.	Baromet. at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature				
		Dry.	Wet.			Max.	Min.	In sun.	On grass			
										Inches.	deg.	
We. 19	30.726	32.4	31.5	N.W.	37.3	35.2	31.8	37.9	31.8			
Th. 20	30.600	31.5	31.3	E.	37.2	36.8	28.9	40.2	29.5	0.015		
Fri. 21	30.345	31.1	30.0	N.E.	37.2	33.3	30.7	33.8	30.5			
Sat. 22	29.920	34.6	32.0	S.W.	36.8	44.4	27.8	73.2	28.2	0.785		
Sun. 23	29.899	32.6	31.8	N.E.	37.4	39.9	27.3	58.8	24.1	0.122		
Mo. 24	29.811	32.4	32.4	N.E.	37.0	37.8	29.4	43.2	29.8	0.453		
Tu. 25	29.656	33.7	32.7	N.E.	35.9	45.3	25.3	47.0	30.8	0.430		
Means	30.141	32.2	31.2		37.0	39.0	28.8	47.7	29.2	1.102		

REMARKS.

19th.—Dark and dull all day, and cold but not frosty.
20th.—A dull cold day, fair, but neither sun nor wind; cold, but not a brisk frost.
21st.—Very dark in the morning, and till near noon gas required; the after part better, but dull and dark.
22nd.—Still dull, but not dark; fine in the fore part of the day, getting gradually dull. Rain between 4 and 5 P.M.; damp evening.
23rd.—Fine frosty morning; slight snow shower at 1 P.M., then fine; heavy rain for a short time at 4 P.M., dull and damp after.
24th.—Snow during the night 3 inches deep at 9 A.M. Snow fell more or less nearly all day, and another 3 inches was measured at 9 P.M.
25th.—Snow fell again during the night, but not nearly so deep as on the preceding one; and by 9 A.M. a rapid thaw had commenced, which continued all day, though there was no sun—merely a change of wind from N.E. to S.W.

With the exception of noon on Saturday and the morning of Sunday the week has been dull throughout. The fall of snow on the 24th remarkably heavy for London, and the thaw unusually rapid. Temperature lower in the air, though on the ground and under the ground, owing to the snow, the temperature is much the same as last week.—G. J. SYMONS.

P.S.—Wednesday morning.—The barometer fell rapidly during the thaw on Tuesday, and throughout Tuesday night, when there was heavy rain and some wind. This morning the pressure is only 28.931 inches, or nearly 2 inches less than this time last week.—G. J. S.

COVENT GARDEN MARKET.—FEBRUARY 26.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	3	0	0	0	Mulberries.....	1	0	0	0
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	per lb.	0	0	0	Oranges.....	100	4	0	0
Chestnuts.....	bushel	12	0	0	Peaches.....	doz.	0	0	0
Currents.....	1 sieve	0	0	0	Pears, kitchen.....	doz.	1	0	0
Black.....	do.	0	0	0	dessert.....	doz.	8	12	0
Figs.....	doz.	0	0	0	Pine Apples.....	lb.	5	0	0
Filberts.....	lb.	1	0	6	Plums.....	1 sieve	0	0	0
Cobs.....	lb.	6	2	0	Quinces.....	doz.	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	4	0	0	Strawberries.....	1 lb.	0	0	0
Lemons.....	100	6	0	0	Walnuts.....	bushel	15	0	0
Melons.....	each	1	8	0	ditto.....	100	2	0	2

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0	0	Mushrooms.....	potl.	1	0	2
Asparagus.....	100	5	0	0	Mustard & Cress.....	punnet	0	2	0
Beans, Kidney.....	100	2	0	0	Onions.....	1 bushel	2	0	0
Broad.....	bushel	0	0	0	pickling.....	quart	0	6	0
Beet, Red.....	doz.	1	0	0	Paraley per doz. bunches	2	0	3	0
Broccoli.....	bundle	0	1	6	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	6	Peas.....	quart	0	0	0
Capicums.....	100	2	0	0	Potatoes.....	bushel	4	0	0
Carrots.....	bunch	0	6	0	Kidney.....	do.	0	0	0
Cauliflower.....	doz.	2	0	4	Round.....	do.	0	0	0
Celery.....	bundle	1	6	2	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	6	4	Rhubarb.....	bundle	1	0	2
Cucumbers.....	each	2	0	4	Salsafy.....	1 bundle	1	0	1
pickling.....	doz.	0	0	0	Savoy.....	doz.	1	0	2
Endive.....	doz.	2	0	0	Scorzonera.....	1 bundle	1	0	2
Fennel.....	doz.	0	0	0	Sea-kale.....	basket	1	0	0
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	3	0
Herbs.....	bunch	0	3	0	Spinach.....	bushel	3	6	0
Horseradish.....	bundle	0	0	4	Tomatoes.....	doz.	1	0	2
Leeks.....	bunch	0	2	0	Turnips.....	bunch	0	3	0
Lettuce.....	doz.	1	0	6	Vegetable Marrows.....	doz.	0	0	0

POULTRY MARKET.—FEBRUARY 26.

The weather is not without its effect on the poultry, and our supply is small, while the demand is somewhat increased by the cessation of the Game supply. The consequence is an inclination to stand out for higher prices.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 6--12, 1873.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	a.
6	TH		48.6	32.2	40.4	18	36	af 6	47	af 5	59	9	18	2	0	11	24
7	F	Day breaks 4.42 A.M.	49.1	32.4	40.7	18	34	6	49	5	41	10	24	3	8	11	10
8	S	Sir W. Chambers died, 1796.	49.1	31.5	40.3	18	31	6	51	5	33	11	20	4	9	10	55
9	SUN	2 SUNDAY IN LENT.	49.2	31.1	40.1	12	29	6	52	5	after.	3	5	10	10	39	68
10	M		49.6	31.6	40.6	16	27	6	54	5	41	1	35	5	11	10	24
11	TU		49.1	32.2	40.7	19	25	6	56	5	50	2	0	6	12	10	7
12	W	St. GREGORY.	50.4	32.2	41.3	21	22	6	57	5	1	4	19	6	13	9	51

From observations taken near London during forty-three years, the average day temperature of the week is 49.3°; and its night temperature 31.9°. The greatest heat was 67°, on the 10th, 1826; and the lowest cold 7°, on the 10th, 1847. The greatest fall of rain was 0.60 inch.

CORONILLA GLAUCA.

IT is in many respects fortunate that the rage for new plants does not entirely drive out of cultivation old ones of merit; still there is as much honour in restoring an old acquaintance to the position it justly deserves as in introducing a new comer to notice. Many old neglected plants are being brought back to do duty in the same way as our forefathers made use of them, or, by a different mode of treatment, they are directed into some other channel of usefulness, and are then found better than some recently-introduced plant which is both scarce and costly. I, for one, have a weakness for old plants, and amongst those which I admire for their beauty and utility is that to which I now call attention.

Coronilla glauca has long been known to the gardening world, and had it been a stove plant, instead of one of the hardiest of our greenhouse subjects, it is likely it would have been oftener met with than it now is, but as it is so easily cultivated, and all but perfectly hardy, I have no hesitation in calling on all those who wish to have as good a display as possible in the dead-winter months to commence its cultivation. With ordinary care it will bloom in the autumn, several months earlier than the *Cytisus*, which it in some degree resembles; nay, the *Coronilla* will in fine sunny seasons set its flowers sufficiently early in the season to expand into full bloom early in the autumn. I think I have seen one growing out of doors in full bloom by the middle of September, and I am not sure if it was not much earlier than this; the season, however, was particularly warm and dry, alike favouring early growth and the ripening of the wood, and also tending to hasten the embryo buds to expand into full blossom. The situation was sunny, but the ground in which the *Coronilla* was grown was also occupied by neighbouring plants and fruit trees. The *Coronilla*, checked in its early progress, finished its growth by well-ripened flower buds, which quickly developed themselves into bright clusters of rich yellow bloom which continued a long time in perfection, and even when they were gone the plant had not the bad appearance which many other fine-flowering plants present when their flowering is over, for its foliage is ornamental at all times.

Perhaps the best way to manage this plant is to strike a number of cuttings every year, and assuming them to be in small pots at the end of the season, let them be put into larger ones about the time they begin to grow, using a good proportion of sand in the mixture. If it be considered necessary to repot a part of the stock again, it should be remembered that the earlier in the summer the growth is completed the sooner the plants will be in bloom. To potbound plants standing in the full sun, and in a position where their roots are not tempted to run into the ground below, water must, of course, be given in sufficient quantities to prevent flagging. Let them have as much sun as possible, and, unless the latter part of the summer be very dull and sunless, you will be

rewarded by well-formed plants obtained without any training, and loaded with flowers, which will come in at times when bloom of any kind is acceptable. With good management a succession of bloom may be kept up till the middle of February, after which the *Cytisus* and other plants take their place. I may add that the *Coronilla* will survive moderately-mild winters when growing in a favourable position, and in such places will bloom also in autumn after a hot dry summer, but the chances of its doing so are not sufficiently great to render in-door culture altogether unnecessary.—J. ROBSON.

LORD LONDESBOROUGH'S GARDEN AT COOMBE.

ALL who have frequented the meetings of the Royal Horticultural Society know how indebted they are for some of their attractions to the very beautiful Orchids which Lord Londesborough never fails to send up, and which his able gardener, Mr. Denning, so successfully cultivates. Hitherto they have been sent up a very long distance—from Grimston Hall, near Tadcaster; but as last year Grimston was sold, and his lordship had no garden near London, it became necessary to obtain some place, and hence the origin of the garden at Coombe.

Having been called up to London on a very sad duty, and not caring to spend the day in the bustle of the great city, I (although the weather was most wretched, a cold raw easterly fog prevailing), determined on making my way into the suburbs, and so went down to Twickenham, where I saw Mr. Little's Cyclamens, of which more another time. What a quaint old straggling village it is! By-the-by, let me recommend to all who wish a most readable book descriptive of English scenery to read "The Strange Adventures of a Phaeton," which gives charming details of a drive through England, not the less readable because a little romance runs through it all. On from Twickenham I walked to Richmond, then went by rail to Kingston, saw Mr. Looker's pottery, and then walked on to Norbiton, taking Lord Londesborough's garden in my way.

I am not aware that it has as yet any distinctive name, for really it is simply a garden and nothing more, and your first idea on visiting it is that you have lighted on some new nursery establishment. House there is none, save that for the gardener; and in fact in August last the place, which will, no doubt, make for itself a name, was simply a Wheat field. Nay, £60 was given as compensation to the farmer for getting off the Wheat, so as to enable the workmen to commence their operations. There are no shrubberies, avenues, parterres—nothing, indeed, of ornament about it; it is simply a plain garden, which, however, by the excellence of its products, will make for itself a name. The neighbourhood is classic in horticulture. Not far off is Jackson's old-established nursery at Kingston, and Mr. Veitch's place at Coombe Wood is about a mile distant. Since August last, then, Lord Londesborough has erected on this piece of ground, or will have erected when finished, about 1200 feet in length of glass, on an average

of about 16 feet wide. There is no attempt at grandeur in their arrangement, utility being the one thing needed. There are therefore, no grand conservatories or blooming houses, but plain simple structures. Many horticultural traditions have been broken through; none of our great horticultural builders have erected the houses, they have all been erected by an ordinary builder, Ford, of Rochester. In the same way none of the old-established systems of heating have been adopted, but one of the most recent introductions, Stevens's Trentham boiler. Of these boilers there will be four, all placed together. One of these heats the vineries 250 feet in length; another will heat the Peach, Fig, and Strawberry houses, together with the vegetable forcing pits, making a total of about 500 feet; another heats the range of Orchid houses, 250 feet by 22 feet; and the fourth heats the pits, 250 feet long.

The Orchid houses contain the splendid collection Lord Londesborough has been for some years forming at Grimston, and of which it is needless to particularise the names. All the various families are thoroughly well represented, and the Council-room at South Kensington bears witness to the skill with which they are cultivated. All looked in excellent health and gave promise of future triumph. The forcing pits were admirably contrived, and from these there have to be supplied every week twenty dozen of forced plants in pots, besides cut flowers for room and table-decoration; it will not be surprising then to hear, that for this purpose alone 20,000 plants are required annually. From these pits also come French Beans, Cucumbers, Asparagus, and the various delicate vegetables which modern luxury demands at seasons when Nature in her ordinary course will not produce them for us. For the same purpose Mr. Denning has a large number of the Grimston plant-protector. This is of wood and glass, and portable, so that it can be removed in a few minutes to any part of the garden, and is economical, for 800 feet of these have been made for £23; but although they are thus light and easily moved, I think I prefer the Acme Frame of Mr. Looker for these purposes. Outside, the ground is being brought into order, so as to form a vegetable and fruit garden, and as the land is good, it will, no doubt, prove by-and-by productive.

The expenditure already made on this ground cannot be less than from £8000 to £10,000, and when we recollect the purposes for which it is done, betokening all through a real love of flowers, it cannot but be conceded that Lord Londesborough is a munificent patron of horticulture, and that among the many names so freely canvassed at late meetings, none would be more popular than his to be connected in some way, not involving much labour, with the Royal Horticultural Society, whose meetings he does so much to make attractive. —D., Deal.

FLOWERS FOR OUR BORDERS.—No. 1.

MUCH do we rejoice to notice throughout the gardens of the three United Kingdoms a revival of the taste for border flowers. We have not a word to pen against bedding-out and ribbon borders, but we have many words to pen in favour of mixed flower borders. They "admit a profusion of ornament, are fit for the reception of every elegance, and require the nicest preservation." They may be arranged so as to be attractive at all seasons of the year, and we now commence publishing a series of drawings, descriptions, and details of culture that will assist our readers in the good work.

OXALIS CERNUA—DROOPING WOOD SORREL.

In the very pretty genus *Oxalis* we have an extensive assemblage of plants of so interesting a character, that it cannot but excite surprise that of more than one hundred species known to botanists, so few should be seen in general cultivation. The habit of the whole is remarkably neat and dwarf, their colours comprise nearly every imaginable shade, and the simplicity of their culture is such, that the veriest novice can hardly fail in their successful treatment. A few only of the species are perfectly hardy, but a considerable number may be grown in the open borders during the summer and autumn; of many, however, the flowers are produced at so early a season of the year, that they are chiefly cultivated in pots, for which all of them are admirably suited, and it is from this section of the genus that our illustration is taken.

The *Oxalis cernua* possesses in a high degree the qualifications we have attributed to the whole genus; its flowers are of the purest yellow, of a delicious Jasmine-like fragrance, and produced in greater abundance than in any other species of our acquaintance. On a bright sunny morning a pot of this

plant will present up to noon a perfect blaze of beauty; but, as in the case of the rest of the genus, its flowers remain closed in cloudy weather, or where no direct sunshine penetrates.

As in most of the other species, the root is a small bulb, from which arises a very short underground stem or stipe, to which the leaf-stalks are articulated. The leaflets, sprinkled with russet brown spots, are so broadly heart-shaped that they may be termed two-lobed, which, with its many-flowered umbel, serves to distinguish it among the stemless species. While young the leaflets are, at the approach of evening, folded back against the petiole, expanding with the return of the morning light; but the older leaves appear to lose gradually this sensibility to the solar radiations, and remain folded under all circumstances.



Oxalis cernua.

The umbel of flowers, consisting of eight to twelve blossoms sometimes more, is supported on a smooth peduncle, or, to speak more correctly, scape, 6 or 8 inches long; and as each bulb throws up at least half-a-dozen scapes in succession, the flowering season of the plant may be fairly said to extend over a period of two months.

Cultivation.—After blooming the plants should be exposed in a sunny corner out of doors, water being gradually withheld. By degrees the leaves will assume a yellow tint, and finally fall off; and in this condition the pots containing the bulbs should be placed aside, and kept perfectly dry until the season arrives for repotting them. If the ball of earth be now examined, a strong fibre may be traced from the surface-bulb quite to the bottom of the pot, and usually terminated by a cluster of young bulbs, each of the size of a nut. A pot planted originally with three bulbs will often contain, after flowering, a dozen or more full-sized roots, so that abundant facilities are offered for its propagation. At the base of the old bulb, which perishes, and also upon the short stipe proceeding from it, small offsets are often produced; but they are too minute to be available for the ready increase of the plant. At the end of September, about which time the roots will begin to grow, they may be repotted in sandy loam, with a little peat or leaf mould, planting them, if large, singly in a 4-inch pot about an inch below the surface; but it is preferable to place from three to five or six bulbs in one of rather larger diameter, a good drainage of potsherds or fragments of charcoal being indispensable. If the weather is mild the pots may remain in a warm nook out of doors, due precaution being taken to protect the plants from those pests of the gardener—slugs, snails, and worms; but on the approach of frosts they should be removed either to a cold frame, or, in the absence of this, to a cool window of south aspect, where plenty of air can be admitted in mild weather. A dry hot atmosphere is injurious to the plant; it should, therefore, be grown at a comparatively low temperature, and be removed to the sitting-room

only when about to flower. If potted at the period named it usually begins to blossom about the end of March; but this depends in some degree on the temperature in which it has been kept. If the roots were preserved in a dry state until January or February, we think it highly probable that they might be planted in the open borders with the protection of a hand-light, and would then flower in May and June, but without this covering it would be imprudent to risk the bulbs. The treatment of all the winter and spring-flowering species may be assimilated to that of the *O. cernua*.

Our plant is not a recent introduction, having been brought, as long since as the year 1767, from the Cape of Good Hope, of which country nearly one-half the species are natives. The trivial name of the plant is by no means distinctive, for there are many species the flowers of which droop before expansion; nor is the term more applicable to the leaves.

The genus derives its name from the Greek word *oxys*, sour or sharp, in allusion to the acid properties of many of the species, due to the presence in their tissues of oxalic acid, usually combined with potash. It is scarcely necessary for us to observe in these days of diffused chemical knowledge that the potash is the only constituent of the combination thus formed (termed by chemists the binoxalate of potash) that is derived from the soil, the oxalic acid being elaborated in the plant through the agency of the carbonic acid of the atmosphere, that grand store-house from which are drawn the elements of every vegetable product. Formerly the expressed juice of the *Oxalis Acetosella* was employed in the preparation of this salt—the salts of sorrel of commerce—but the resources of modern science have long since led to the substitution of more certain and cheaper methods of procuring it.

Nor is the genus *Oxalis* the only one in which this acid occurs, for it is constantly present in the common Sorrel, *Rumex Acetosa*, in the roots of the Gentian family, and also in some species of *Saponaria*; in combination with lime it exists in the Rhubarb stalks; and in several kinds of Lichen, such as *Parmelia* and *Variolaria*, the oxalate of lime is so abundant, that it forms a hard skeleton or crust.—(W. THOMPSON'S *English Flower Garden*.)

CHOICE GREENHOUSE RHODODENDRONS.

No. 2.

RHODODENDRON PRINCESS ROYAL.—A dwarf compact plant of great beauty. The umbels of bloom are long and funnel-shaped, and rich rose in colour. This I have seen bloom twice in the year. A garden variety.

R. PRINCESS ALICE.—Most of our Royal Princesses would seem to have one of these beautiful hybrids dedicated to them, and this is a perfect gem. It would seem to belong to the group of which *R. ciliatum* is the type; dwarf in growth, with small foliage, it becomes perfectly covered with its bell-shaped flowers, which are pure white within, the outside of the petals being suffused with rosy pink; added to this, they are deliciously sweet.

R. PRINCESS MARY.—This is a beautiful hybrid, of compact growth and profuse blooming habit. The flowers are produced in terminal umbels, and are pure white within, but suffused on the outside of the petals with rosy carmine. A very desirable variety.

R. COUNTESS OF HADDINGTON.—A hybrid of robust habit of growth, forming a much-branched handsome shrub or small tree. The foliage is ample and dark green, the umbels of bloom are numerous, and the individual flowers large, often measuring 3 inches in diameter, with a spreading limb, pure white, softly tinged with blush, and deliciously fragrant. It is the result of a cross between *R. ciliatum* and *R. Dalhousieanum*, and blooms during March, April, and May.

R. JENKINSII.—This is a fine species, forming a handsome much-branched shrub, or, perhaps, it may better be called a small tree, as it attains a height of 6 or 7 feet. The leaves are oblong-lanceolate, coriaceous in texture, slightly waved at the margins, and bright dark green in colour. Flowers large, snow white, measuring between 3 and 4 inches in diameter, of fleshy substance, and lasting long in beauty. It is a native of Bhootan.

R. BOOTHII.—Another of the fine Bhootan kinds, growing some 5 or 6 feet in height. The leaves are somewhat small, oblong, or inclining to ovate, with a rounded base; they are coriaceous in texture, furnished at the edges with a few brown hairs, the upper side bright shining green, paler below. The young shoots are also clothed with a brown woolly tomentum,

which, however, disappears with age. Trusses terminal, bearing from six to nine medium-sized, clear, soft yellow flowers of good substance and great beauty.

R. HENRYANUM.—A garden hybrid, produced between *R. Sesterianum* and *R. Dalhousieanum*. It is a plant well meriting a place in every greenhouse. The flowers are large and of good form, pure snow white, and deliciously sweet.

R. WINDSORI.—This is a beautiful species, but one which is too seldom seen in our conservatories. It forms a very handsome much-branched shrub or small tree. The foliage is somewhat small and dense, oblong-lanceolate in shape, and acuminate, deep green above, paler below. The trusses of bloom are very compact, the flowers themselves being glowing deep crimson in colour. Native of Bhootan.

R. WINDSORI LEUCANTHUM.—A variety of the preceding, but it does not owe its origin to the skill of the cultivator, having originated in its native country. It differs from the normal form in its small lanceolate-acuminate leaves, which are deep green above and glaucous below, and in the flowers themselves being pure white. In habit of growth it resembles the species, and attains to about the same dimensions.

R. DENNISONII.—A compact-growing, much-branched plant. Leaves ample, medium-sized, bright dark green on the upper surface, but paler beneath. It blooms very freely, the flowers being large, pure white, saving the upper petals, which are stained with soft sulphur yellow. It is a garden hybrid of great beauty, the result of a cross between *R. Dalhousieanum* and *R. Edgworthii*.

R. JAVANICUM.—A very fine species, of dwarf compact habit. Leaves some 4 inches long, and nearly 2 broad, ovate-lanceolate in shape, and acuminate, fleshy in texture, deep, almost bronzy, green on the upper side, light green beneath. Flowers large, of good substance, and bright orange in colour. It is a charming plant. Native of the mountains of Java.

R. JAVANICUM ANGUSTIFOLIUM.—A variety of the preceding, often called Veitch's variety to distinguish it from the preceding, which is called Rollisson's, the respective forms having been introduced by these firms. In this plant the leaves are somewhat narrower, and the flowers are rich dark orange in colour, rendering it both attractive and desirable. Native of Java.

R. NUTTALLII.—We now come to a magnificent species. Although, perhaps, not one of the most compact-growing kinds, it is, nevertheless, well deserving a place in every conservatory. The foliage is large, being from 9 to 12 inches in length, and 4 or 5 in breadth, ovate-oblong in shape, thick and leathery in texture, the upper surface being deep green and much corrugated, the under side suffused with reddish pink while the leaves are young, which changes to light green with age. The trusses of bloom are very large, frequently bearing eight or nine flowers each, measuring 6 inches in diameter; these are of good substance, pure white within, relieved by a golden centre, suffused with lilac rose without, and very fragrant. This noble species is a native of Bhootan.

R. HODGSONII.—This, although a most beautiful species, still remains amongst the rarer kinds of the genus. It forms a compact and handsome shrub or small tree. The leaves vary from 6 to 12 inches in length, and are bluntly obovate, coriaceous, and dark green, but the under side of the leaf is clothed with a white tomentum. The trusses of bloom are large, round, and terminal; the flowers are campanulate and of fine form, the prevailing colour rose and white, more or less suffused with purple. It is a lovely ornament to the greenhouse. Native of Sikkim Himalaya.

R. MADDENI.—A compact dwarf-growing shrub, seldom, as far as my own observation goes, exceeding 4 feet in height, and as it blooms freely even when quite small, it is well suited to the requirements of those with very limited space. The leaves are lanceolate and acute, medium-sized, smooth and dark green on the upper side, whilst beneath they are clothed with a short ferruginous tomentum. The flowers are large and freely produced, tubular, with somewhat pointed lobes at the spreading bell-shaped mouth, where they measure upwards of 3 inches in diameter. Colour pure white, tinged with rosy pink on the upper segment. In addition the flowers are very fragrant. It blooms during April and May, lasting many weeks in full beauty. Native of Sikkim Himalaya.

R. FALCONERI.—Although this species is only suitable for those possessed of large conservatories, the plant is of such noble aspect, that it seems worse than sacrilege to omit it from an enumeration of this kind; moreover, it is sufficiently hardy to stand in the open air, but unless it is placed in some

very sheltered situation it presents a woe-begone appearance, on account of the wind breaking and tearing its large leaves into ribbons, and therefore where so grown it must be protected from the wind. In a state of nature it attains the height of a tree. The leaves are upwards of a foot long, and about 6 inches broad, bluntly obovate in shape, and coriaceous in texture; the upper side is deep green, but clothed below with a deep brown tomentum. The heads of bloom are very large and terminal, flowers large, campanulate, and snowy white, saving the upper lobes, which are suffused with rosy purple. It is a superb species, but I warn amateurs that it will not bloom in a young state. Native of the mountain of Touglo, at 10,000 feet elevation in Sikkim Himalaya.—EXPERTO CREDE.

ROYAL HORTICULTURAL SOCIETY.

Nothing has yet been definitely settled by the Council as to the course they intend to pursue. Their desire is to resign in a body, and to enable them to do so we believe it is contemplated to summon a special meeting of the Fellows to pass a bye-law to that effect. We are further informed that this is the only way by which they can take power to themselves to resign. Without professing to be sufficiently well informed on the subject, we doubt if the Council can take the course they have indicated. We conceive that the Council having been elected, and having voluntarily accepted office for a year, they are in the position of Trustees of the Society, and cannot resign as a body. The Charter, although it provides for the resignation of individual members under certain conditions, makes no provision for the resignation of the whole body, and we doubt very much if any bye-law especially framed to meet the case is legal, being contrary to the spirit of the Charter.

It is very proper that the Council having voluntarily accepted the trust for a year, should not be permitted to abandon the Society and to leave it without a head. Supposing the Council to resign, who is qualified to take the initiative? No individual Fellow can do so, and certainly no body of Fellows, which must be self-constituted can do so, because any meeting which is not called by a Council must be an unconstitutional body, and if no Council exists there cannot be a constitutional meeting. We do not see how the Council can resign under any arrangement that is contemplated, except by an application to the Court of Chancery.

Whether they remain, or whether they retire and are succeeded by a new body, we sincerely trust that the policy we indicated in our last to separate from the Royal Commissioners will be carried out. Year after year the relationship between the two bodies becomes more embittered and action more difficult. The Royal Commissioners have schemes of their own they wish to develop, and the Royal Horticultural Society stands in the way, and, being treated as the little brother or small boy of the party, has to yield and make concessions that are adverse to its independence and humiliating to its position. It is no gain to the Society to remain in the close connection with the Royal Commissioners as these are now constituted, and with the policy they act upon. Had the lamented Prince Consort been spared to carry out his enlightened views in his own way, the Royal Horticultural Society would have found a friend to protect and a wise counsellor to direct it; but since his death the Society has been forced to fight against aggression on all hands. This being the state of matters, would it not be better for all parties that a separation took place? There need be no difficulty provided both sides agree, and the terms upon which it is carried out could easily be settled by those who are experienced in cases of arbitration. The Society has expended on the estate of the Commissioners a sum of upwards of £70,000. It owes a debenture debt of £50,000, for the half of which the Commissioners are liable. There is an unexpired term of eighteen years of the lease still to run, and at the expiration of the lease the Commissioners have to pay the Society £15,000 in the event of non-renewal. Taking these facts into consideration, it is a question to be settled as to what compensation the Society is to receive for the surrender of the lease. It is only those who are professionally accustomed to the settlement of these questions who are competent to say what compensation is due to the Society; and no doubt, if such a negotiation is entered upon, the solution will be easily arrived at. But there are certain stipulations in the arrangement we should not like to be lost sight of. The Society on going back to the old home should reserve the right to hold the fortnightly meetings at South Kensington, an office and a room for the reception of the Lindley Library;

and as regards the great summer shows, these may be matters of arrangement with the Commissioners, who, in our opinion, would find it their interest to subsidise the Society to hold their great shows in the garden at South Kensington. We cannot imagine any attraction that will be more effective than these flower shows; and there is always this alternative with the Society—if the Commissioners decline to receive them, there are other public bodies who are willing to do so.

If the Council insist on retiring, and they succeed in doing so by any arrangement whatever, then it will be the duty of the Fellows to elect their successors; and we fervently hope that they, whoever they may be, will be pledged on accepting office to enter into immediate negotiations with the Royal Commissioners to bring about a separation between the two bodies.

SINCE the above was in type we are informed that the Council will submit new Bye-laws to a General Meeting about the 26th of March, enabling them to resign in a body.

I WAS sorry to see the objection raised by "A VERY OLD F.R.H.S." to the nomination of Lord Alfred Churchill on the Council of the Royal Horticultural Society. It could only have been on the ground that titled members of the Council habitually neglect the duties of their office, and that as a matter of course Lord Alfred would do so likewise. I have been a co-director with him on four different public companies, and I can say that I know of few who give more scrupulous attention to the interest he represents than his Lordship; and as regards practical interest in horticulture, I know that in his large garden at St. Helen's, Sandhurst, he is truly a practical horticulturist.—A. A. C.

WILL "NOT A F.R.H.S.," kindly name some Fellows in and about London—good horticulturists, who will have the welfare of the gardening community at heart, and competent men of business who will be able to attend the Council of the Royal Horticultural Society if nominated and elected? Those who will step forward to put their shoulders manfully to the wheel to help on the horticultural waggon will be doing good service. I named Mr. Hole as one whom most horticulturists would rally round, my object being to break down the system by which the Council elected themselves; the Fellows—i.e., the Society, virtually having no voice in the matter. If I had known what I do now it would have been an easy matter, I think, to have elected the first day whom we choose. As, however, the Council has since broken-up, it does not much matter, but many men have said to me privately, and some have written publicly to say, there are plenty of competent horticulturists about London. I say pray let us have the names. If we want to win our cause do not delay.—C. P. PEACH.

A MEETING of the Committees of the Society was held at Charing Cross Hotel, on the 24th of February, when it was resolved that a HORTICULTURAL DEFENCE COMMITTEE should be appointed, consisting of three members from the Fruit, Floral, and Scientific Committees respectively, as follows:—Fruit Committee: G. F. Wilson, F.R.S.; J. Lee, Dr. Hogg. Floral Committee: J. Fraser, B. S. Williams, T. Baines. Scientific Committee: R. Fortune, T. Moore, Dr. Masters, F.R.S. Hon. Sec., H. J. Veitch.

ROSES LA FRANCE AND MARIE BAUMANN.

REGARDING La France and Marie Baumann from a gardener's point of view, that is in respect to their general utility, I would assign both of them a high position in the first class. Marie Baumann is certainly not a rampant grower, under good treatment its growth is sufficiently robust for all practical purposes. The whole of the plants of it under my care have thriven well, and some of them produced last autumn stout shoots upwards of 2 feet long, and then its possession of fine form and gorgeous colour no one can deny; even its disparagers in your columns are prudently silent on these points.

The merits of La France in every point are so great that when repeatedly admiring it, and hearing others unanimously loud in its praises, one never contemplates the possibility of having to defend it. Of an extensive collection embracing most of the best kinds, La France certainly took the leading position last season, every plant of it producing a profusion of fine, full, and very sweet-scented flowers. Baroness Rothschild is a bold, striking, and very beautiful variety, but it is

not equal to La France in form, fulness, colour, or scent. The last-named property of La France is especially noteworthy and renders it an especial favourite to the ladies, after which conclusive argument nothing more need be said, for, depend upon it, when a Rose has the benefit of such patronage it will continue a favourite in spite of adverse criticisms.—EDWARD LUCKHURST.

ROYAL HORTICULTURAL SOCIETY'S SHOW AND COMMITTEE MEETINGS.

MARCH 5TH.

NOTWITHSTANDING the present crisis in the affairs of the Society—a crisis more serious than has ever before occurred, many as its vicissitudes have been, it was evident from the manner in which horticulturists came forward on this occasion, from the truly splendid display which they produced on a day when such could be least expected, and from the strong numbers in which they mustered from all quarters, that they are thoroughly determined to support the Society in its legitimate direction, “the promotion of horticulture in all its branches, ornamental as well as useful.” It was further evident, that whatever changes may take place, these changes, if for the advancement of horticulture, will have a large and influential support—a support that will insure the most beautiful products of our gardens being abundantly represented in perfection at all seasons, and which, too, must carry on a tide of success that body which is so fortunate to secure it. With its many successes, and despite of many failures, the Society has done great things for Britain and British horticulture, and not for British horticulture only, but the horticulture of the world. It has brought before the world great things and great men; and on whomsoever the mantle of Josiah Wedgwood and Sir Joseph Banks, Sabine and Lindley, and many others, all departed, may fall, we doubt not that among those living there are plenty to carry out the great work they so well and comprehensively began. The Royal Horticultural Society is an institution which neither our own nor other countries can spare; it has the wide world for its sphere of usefulness, but England alone should be sufficient to maintain it first among the horticultural institutions of the world. If they but unite as one, they will effect that object without extraneous aid; and if they have to effect it alone, to them be the honour, to others the shame.

Passing now to the Show, which was held partly in the entrance hall, partly in the Council-room, it was, as already observed, unusually extensive for the time of year, and it must also be remarked unusually brilliant. The Cyclamens were an exhibition of themselves, and the Orchids were even more gorgeous, if less numerous, than at a summer show, whilst Messrs. Veitch's and Mr. Paul's Camellias—the first as large plants, the second as small ones—were a most beautiful feature.

In former years, at corresponding shows, Camellias in pots have been represented either by small or poor specimens. On this occasion, however, Messrs. Veitch sent an excellent half-dozen, consisting of bushy specimens, about 4½ feet high, of Bononiensis, Leon Leguay, and Teutonia alba, full of bloom and buds, together with smaller plants of Donckelaari, Fimbriata, and Angustina superba. A first prize was awarded.

In Classes 2 and 3, for twelve and six cut blooms respectively, Mr. George, gardener to Miss Nicholson, Putney Heath, had good stands, including Elegans, Albaplena, Mathotiana, Countess of Orkney, and Donckelaari. Mr. Grant, gardener to J. B. Glegg, Esq., Wittington Hall, Conington, sent very good specimens of Countess of Orkney, Miss Glegg, Storyii, Mrs. Abbey Wilder, taking first for six, and second for twelve blooms. Mr. William Paul, Waltham Cross, sent three magnificent stands containing twenty-one varieties, three blooms of each. These were not for competition.

In Class 4, six forced shrubs, Mr. George, gardener to Miss Nicholson, was first with good specimens of Azaleas, Rhododendrons, and Andromeda floribunda, the last very fine.

The next class, for collections of Cyclamens, formed a splendid exhibition of itself. Mr. Goddard, gardener to H. Little, Esq., Cambridge Villa, Twickenham, had a magnificent collection consisting of pots extremely full of bloom, and very brilliant in colour. On one plant there was a flower which had a cock's-comb-shaped flower with more than twice the usual number of segments. Mr. James, gardener to W. F. Watson, Esq., Isleworth, also sent a numerous and very good collection. Mr. Smith, Ealing Dean Nursery, also sent one consisting of smaller plants. Mr. Goddard was first, Mr. James second, and Mr. Smith third. In groups of twelve Mr. Goddard again exhibited magnificent specimens, most of which had a hundred or more flowers; Mr.

James also sent fine pottfuls, and from the same exhibitors likewise came groups of six. Mr. Goddard was first in the two classes, Mr. James second.

The next class was for six pots of Lily of the Valley. There were only two exhibitors—viz., Mr. James and Mr. George, who had each very good pots. Mr. James was first, Mr. George second.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Mr. Bannerman, gardener to Lord Bagot, sent three bunches of Lady Downe's Grapes in excellent preservation, but deficient in colour. Mr. John Eade, gardener to Dr. Bennett, The Grove, Weybridge, sent a specimen of the Horned Orange, which is distinguished by the carpels being developed beyond the surface, and forming projecting horns on the fruit. In the specimen exhibited there was only one horn developed. Mr. Francis Dancer, of Chiswick, sent specimens of Reinette de Caux, a French Apple, which is said to be a great bearer. It was of good flavour for so late in the season. He also sent fine examples of Northern Greening and Dumelow's Seedling. A fine bundle of Asparagus was sent by Mr. Miles, The Gardens, Wycombe Abbey, to which a cultural certificate was awarded.

Mr. Picirillo, of Wigmore Street, sent a collection of Neapolitan vegetables, consisting of the Broccolis Cavoli Romani and Naples Champion, Finocchi Naples Flat Endive, Cabbage Lettuce, early Peas, Nocera Carrots, White Radish, spring Onions, and Lemons. A letter of thanks was awarded to the exhibitor.

Prizes were offered for single bunches of early Grapes, also for single dishes of Asparagus, Sea-kale, and Rhubarb, but no one came forward to claim them. For late Grapes, Mr. Bannerman, gardener to Lord Bagot, Blithfield, was first with a fine bunch of Black Alicante, showing also two others almost equally good, not for competition, likewise six bunches of Lady Downe's. Mr. Sage, gardener to Earl Brownlow, Ashridge, was second with the same kind; and Mr. A. Parsons, gardener to W. J. Blake, Esq., Danesbury, third.

FLORAL COMMITTEE.—W. Marshall, Esq., in the chair. Messrs. Veitch, of King's Road, Chelsea, exhibited a collection of thirty-six pot Roses beautifully flowered, the foliage and flowers fresh and clean. The best sorts were Dr. Andry, Madame Fillion, John Hopper, Beauty of Waltham, Mdle. Marie Rady, Pierre Notting, Madame Willermoz (Tea), very beautiful, Duke of Wellington, dark velvety crimson, besides which there were other popular varieties. The same firm had a fine bank of Orchids backed with Palms. The beautiful Dendrobium Wardianum had two flowering spikes with seventeen and ten flowers on the spike. A cultural certificate was awarded for this. Odontoglossum Andersonianum was shown with a fine spike; one peculiarity of this kind is that the flowers open pale yellow, and change with age to a creamy white; both characteristics were to be observed at this meeting, an excellent spike with newly-opened flowers being exhibited in Lord Londesborough's collection. Odontoglossum nebulosum pardinum, a form having the sepals and petals densely covered with large brown spots, had a first-class certificate. The same award was given to a Lælia, but with the growths quite distinct from L. cinnabarina. A first-class certificate was likewise given for Asplenium longissimum. An extra prize was given to Messrs. Veitch for this collection.

Mr. W. Bull, of Chelsea, sent a nice collection of exotic plants, amongst them a remarkable Aroid, Amorphophallus Rivieri, with a finely-developed spathe. There were, besides, an excellent Palm for table decoration, Dæmonorops pericantha, and Odontoglossum Pescatorei superbum, a very fine form of the species. An extra prize was given to the collection.

Mr. C. May, gardener to J. S. Brockett, Esq., Muswell Hill, sent a fine group of Orchids, comprising a large specimen of Cœlogyne cristata, the magnificent large yellow Oncidium macranthum, Cypripedium niveum and its variety superbum, Odontoglossum Andersoni, a fine Cattleya Warscewiczii, the pure white Masdevallia towarensis, excellent examples of Odontoglossum Alexandræ, Lielia anceps, and Oncidium cucullatum, also a species of Odontoglossum with large pale yellow and brown flowers, which received a first-class certificate. A cultural certificate was awarded for the collection.

From Mr. Denning, gardener to Lord Londesborough, came a magnificent collection of Orchids, which received a cultural commendation. It comprised remarkably fine examples of the beautiful white and yellow Cymbidium eburneum, a variety of Cœlogyne cristata with lemon colour instead of orange in the lip, Cattleya Trianae Ruckeri, Lycaste Skinneri, and Odontoglossum Andersoni, together with Vanda gigantea and Bolbophyllum siamense.

Messrs. Rollisson & Sons also sent a group of Orchids, comprising very good examples of Vanda suavis, Phalaenopsis Schilleriana, Cypripedium villosum, and Dendrobium Wardianum the last-named especially striking.

From Mr. Williams came a splendid group of Palms, Orchids, and other plants, notable among which were a fine *Imantophyllum miniatum*, the splendid blue *Tillandsia Lindenii*, *Trichopilia suavis*, and *Vanda insignis*. Mr. Laurence, gardener to Bishop Sumner, Farnham Castle, had a cultural certificate for a specimen of *Dendrochilum glumaceum* measuring more than a yard in diameter.

Mr. William Paul, of Waltham Cross, sent a superb collection of Camellias in 5 and 6-inch pots, with large and extremely beautiful flowers, and remarkably healthy foliage; likewise a fine group of his large pure white *Primula*, Waltham White, which had before received a certificate. From Mr. James, of Isleworth, came also a very fine group of *Primulas*. From Mr. H. Herbst, Nurseryman, Richmond, came a small group of young Palms, and the neat little white-flowered *Spiraea Thunbergii*; also a group of Palms and forced shrubs, such as *Lilacs*, *Deutzias*, *Spiraea japonica*, and Indian Azaleas, as well as a box of forced Lily of the Valley. Mr. Ware, Hale Farm Nursery, Tottenham, contributed an interesting group of hardy flowering and ornamental foliage plants. Mr. R. Dean, Ealing and Bedford, had a first-class certificate for a very pretty hardy *Primula*, called *Violet Gem*, having beautiful violet purple flowers, and a like award for *Primula vulgaris auriculæ-flora* with maroon crimson flowers.

Mr. Croucher, gardener to J. Peacock, Esq., Sudbury House, Hammersmith, had first-class certificates for *Agave Kerchovii*, *A. Baxterii*, and *A. perbella*. Mr. Green, gardener to W. Wilson Saunders, Esq., had a like award for a more handsome example of the last-named. Messrs. Standish & Co., of Ascot, exhibited a branch of *Clematis indivisa lobata*, a charming cool greenhouse climber, which withstands several degrees of frost, and which forms, we understand, quite a feature on the roof of one of their houses at Ascot.

GLASS ROOFS.

I PRESUME that other horticulturists besides myself have had good reason to complain of the effects of atmospheric changes on the paint and putty of their glass roofs. We have 12,000 feet of glass roofing, 7000 of which are painted and glazed with putty on the old and unsatisfactory plan, and 5000 on the plan I am about to describe, and for which I took out a patent a few years since, and which, after completing my invention, I allowed to be used by the public. As it is difficult to give correct ideas of this mode of glazing without drawings, I will merely draw attention to the most important features of this imperishable roof. The rafters are grooved half an inch deep on one side and one-third on the other side. This, in case of breakage, allows of a sheet of glass being inserted without interfering with the other glass. After the rafters have been fixed, the glass is slipped down, and lapped a quarter of an inch; in order to make each lap fit well, every sheet of glass is matched on a plane board before it is slipped into the grooves, then every flat sheet is matched to a flat one, and every curved one to a curved one. This, if properly done, will make the laps almost airtight; but if it is necessary to make the work more complete, then Hoare's varnish, kept liquid by hot water, may be applied to the inner part of the lap, as oil is applied to the sewing machine. This causes the laps to be thoroughly airtight and watertight. After the glass has been inserted putty is used to fill up the grooves; this makes very solid work, and the putty is never affected by frost, as I have proved by experience. The rafters are not painted, they are prepared by placing them in a trough, where boiling creosote is poured on them; here they are allowed to remain two hours, the creosote is then drawn-off and boiled again, and again poured on: if it be drawn-off in about half an hour, and the rafters then taken out, they will be dry in a day, and fit for use. In six months afterwards they may be painted, but the brown colour of the creosoted wood has not an unpleasant appearance; at all events you have the pleasant reflection that it will not cost you anything more for putty or paint.—OBSERVER.

LOBELIA PUMILA GRANDIFLORA.—I used this *Lobelia* last season for bedding-out, and I can most strongly recommend it for small beds. It does not come true from seed, but it is easily propagated by cuttings. I obtained a small plant in the month of June, from which I took about a hundred cuttings, and put them in a cold frame. They made nice plants by the autumn. I let them remain in the cutting-pans until the following spring, then divided them, and had enough and to spare. I gave some to my neighbours, and they were delighted with it. It will do best in a warm place through the winter months,

and should be kept near the glass, or the plants will be likely to damp-off.—O. ORPET.

POLYANTHUS CULTURE.

I SEND you the method by which I grow my Polyanthus in beds. I take the soil out of the bed 18 inches deep, and I put a thick layer of old horse dung at the bottom. Then I mix the soil from the bed with old turf, leaf mould, and good sharp sand, well mixed together in equal proportions, and I put it on the horse dung on the bed where the plants are to flower. I put the horse dung at the bottom of the bed, because I find the plants always strike down to it, and they flower much stronger. The situation that I always find the best is a shady border under a hedge, where they are screened from the hot sun. The Polyanthus is often killed by red spider: to avoid which, as soon as possible, I lift them from the frame with a good ball of earth, and take care not to break the young roots off them. I plant them 10 inches apart. When in flower I shade them from the hot sun, and the flowers consequently keep fresh much longer. Crossing for seed should be done from twelve to two o'clock. Impregnation is more effectual when done at this time. The plants that I save seed from are those that I bloom in pots in a frame, and from which bees are kept. The best-marked flowers, with the best tubes—such as Lord Lincoln, Beauty, George IV., Kingfisher, C. Allsebrook, and President—are good to breed from, as they seed freely. I am sure if any of my Polyanthus friends will try those sorts, they will find them excellent. I have myself two thousand plants of seedlings to flower this spring, and something like forty kinds to plant out to try again, that were very promising last spring. Some of them I expect to be fine.

To raise a good stock I make up a hotbed in my large frame, and put 6 inches of leaf mould in it. Twelve days after, when the heat has subsided, I take my plants up and divide them. The latter end of July is the best time for this operation. Take care that there are no old roots left to them, as they are often cankered, and do the plants no good. It does not matter if there be no roots to them at all, as they soon make new roots when put in heat. I give them a good soaking with water, and keep them close for about twelve or fourteen days; then I give a little air for a few days, afterwards I take the lights off altogether till the end of September, and then put the lights on for the winter. I generally sow my seed the first week of March in well-drained pans. Fill the pan with leaf mould and turf, and a little sand on the top. In this I sow my seed, just covering it over, and give it a good watering, and put it in the frame till it comes up. As soon as the young plants form rough leaves, I put them out of doors till the latter end of June, then I plant them in beds, where they remain till they flower. Inferior sorts I pull up as they flower. If any of my Polyanthus friends will send to me in April, I shall be glad to send them a box of flowers of named kinds, and some of my seedlings to look at.—WILLIAM ALLSEBROOK (in *The Gardener*.)

THE SELECTION OF ROSES.

THE letters by Mr. R. W. Beachey are a perfect delight, for he puts so clearly and forcibly the exact sentiments of real Rose-growing amateurs, and I, as well as many others, have had to pay much to find out what he so admirably tells. In the absence of some such table of different qualities as he sets forth, most of the lists sent in are short of their greatest value; if they had those different qualities appended, each grower might select Roses for the exact qualities he most prefers. The Rose merchants themselves would be the most benefited, I believe, by such unmistakable and well-defined qualities being clearly set forth, for then all would get what they wish, and many would be saved the disappointment that leads to their giving up growing Roses at all. I speak from costly experience, and am confident this is the truth, and hope you will work this matter to an issue as pointed out by Mr. Beachey; for this course would certainly lead to a very large additional growth and demand for the queen of flowers.—S. S.

CHAMÆROPS FORTUNEI.

YOUR correspondent Mr. J. Robson, in writing upon the non-advisability of planting this Palm in the open air, does not, I think, make out a case against either the hardiness or the

beauty of the Chinese *Chamærops*; indeed, if a case of any kind is made out against anything, the verdict would seem to be unfavourable to your correspondent, who planted the Palms out of doors without at first protecting them from rude storms, and still persisted in subjecting them to cutting winds, thus disfiguring every fresh leaf that was made, in spite of the facts before his eyes proving that a little shelter from neighbouring shrubs was all that they required to maintain their pristine beauty.

Again, in my estimation there exists no plausible reason why both amateurs and gardeners should not be urged to plant this *Chamærops* extensively, instead of being dissuaded from it. To refuse to plant it on account of its slow growth is, to say the least, a very selfish reason. Our forefathers did not argue thus when planting small Cedars of Lebanon, Oaks, and many other slow-growing trees, otherwise we should lack the fine specimens which now adorn the parks and gardens throughout the length and breadth of the land.

The late Dr. Lindley was very sanguine as to the future of this plant, and I well remember his words on the subject delivered in the old Regent Street rooms. He said, "I would advise everyone to plant this newly introduced Palm extensively; for I am fully convinced, if this be done, that in the course of some twenty years the distinctness of its habit combined with its thoroughly tropical aspect will quite alter our park and woodland scenery, and render it a general favourite." Had this advice been taken in the spirit in which it was given, numerous fine examples would in this year of grace be objects in the land, but in those days English plant-growers had no love for Palms as a rule. Now that the scales have fallen from our eyes, and we can appreciate their beauty, we should endeavour to make all the amends in our power for former shortcomings.

I wish it, however, to be perfectly understood that I do not advise *Chamærops Fortunei* to be planted in the open ground in the small state in which your correspondent seems to have done it, and this, too, because I acknowledge the slow progress the plants make under these circumstances and the little effect they produce in that stage. I much prefer growing them in pots and tubs for some time, using them as ornaments in the greenhouse and conservatory until they attain considerable dimensions, so that when finally planted in the open air they may produce an immediate effect.

Plants intended for planting-out in spring should be kept during the preceding winter in some structure with a northern aspect, and in as low a temperature as possible, so that when exposed to the sunny balmy days of spring they may burst quickly and vigorously into growth. If, on the other hand, they are wintered in a warm spot, the probability is the summer will be nearly past before any growth is made, and this will be injured during the first winter. Of course they require some temporary shelter at first—in fact, a naturally sheltered spot should be selected. We do as much for many other plants which adorn our gardens, and why not for this? In winter a little short litter laid across the crowns between the petioles will serve to keep the snow or too much moisture from running into the heart.

Chamærops Fortunei is only increased by seeds, so also are the majority of our finest Conifers, but I never heard this raised as an objection to their culture. The plant annually produces a quantity of seeds in the South of Europe, and they come up freely; and anyone who visits the nurseries in Holland, Germany, and Belgium, may see thousands of these plants growing in various stages, from those with but a single leaf up to good plants fit for planting out or using as summer adornments in the subtropical garden. These are distributed throughout the whole of Europe, great numbers finding their way to Russia, and are used for window plants and for the decoration of dwelling-rooms and vestibules in winter, and for terraces, &c., during summer, so that there is no dearth of the species; and had Dr. Lindley's advice been taken, there is not the slightest doubt that, in our southern and western counties especially, we might now have possessed many fruit-bearing trees also.

In conclusion I may add, that having had considerable experience with Palm seeds, I have found as a rule that if kept dry very few kinds retain their vitality for any lengthened period; for however large the seed, the germ itself is usually but a mere speck, and if this becomes shrivelled so as to leave however small a cavity between it and the nut, vitality is gone. This can easily be ascertained before planting by carefully paring the nut down first having found the position of

the germ. On the other hand, if kept moist and cool they will remain a long time, but it is a dangerous practice, because they are apt to decay; and therefore I recommend Palm seeds of all kinds to be put at once into strong moist heat, although I have found this not always effectual in getting them up quickly; the most remarkable case which occurred with me being some seeds of West African *Raphias*, which continued starting into growth a few now and again, extending over a period of three years and seven months.—EXPERTO CREDE.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

BELLIS ROTUNDIFOLIA CÆRULESCENS. *Nat. ord., Compositæ. Linn. arr., Syngenesia Superflua.*—The Blue Daisy of the Atlas Mountains. Leaves with a petiole of about 3 inches long; blade about an inch in length, ovate, orbicular or subcordate, sinuate-toothed, three-nerved. Disk florets yellow; ray florets varying from white to pale blue.—(*Bot. Mag., t. 6015.*)

ELLEANTHUS XANTHOCOMUS. *Nat. ord., Orchidacæ. Linn. arr., Gynandria Monandria.*—A native of Peru. Leaves suberect, 5 to 7 inches long, lanceolate, acuminate, about ten-nerved. Bracts yellow, tinged with green. Flowers crowded, bright yellow, sessile. Lip panduriform, strongly incurved.—(*Ibid., t. 6016.*)

ALSOBITRA SARCOPHYLLA. *Nat. ord., Cucurbitacæ. Linn. arr., Monœcia Pentandria.*—A climbing evergreen plant, native of Bunnah and Siam. Foliage fleshy, bright green. Flowers small, very numerous. Panicles slender, axillary, pendulous, many-flowered, greenish yellow. Flowers diœcious, ebracteate, pale straw-coloured.—(*Ibid., t. 6017.*)

BRACHYOTUM CONFERTUM. *Nat. ord., Melastomacæ. Linn. arr., Octandria Monogynia.*—Native of the Andes of Peru and Ecuador. Flowers pendulous, each with two opposite, spreading, leaf-like bracts and four decussating, orbicular, concave, appressed coriaceous ones. Four inner bracts pale yellow-green; outer pair suffused with red. Corolla tubular, deep violet purple.—(*Ibid., t. 6018.*)

ZINGIBER PARISHII. *Nat. ord., Scitamineæ. Linn. arr., Monandria Monogynia.*—Native of Moulmein. Stems leafing, 3 feet high, thick as a swan's quill, almost cylindrical. Leaves with a glabrous terete sheath, and an elliptical-oblong or lanceolate acute blade, dark green above, paler beneath. Bracts closely imbricated, green, with broad scarlet margins. Flowers pale straw-coloured; the lip reticulated in squares, with brown purple veins.—(*Ibid., t. 6019.*)

COTYLEDON MAMILLARIS. *Nat. ord., Crassulacæ. Linn. arr., Decandria Pentagynia.* Stems sparingly branched, pale red-brown, thick as the middle finger, fleshy, covered with close prominent scars of fallen leaves. Lips recurved. Leaves spindle-shaped, pointed, contracted at the base, quite cylindrical on a transverse section, smooth, glaucous green, nerveless. Spike a foot long, rachis dark chestnut brown. Corolla tube dull red-brown, with five-ribbed angles, contracted at the mouth; limb dull red-brown, spreading, reflexed, five-lobed.—(*Ibid t. 6020.*)

IRIS IBERICA PERRYANA.—"One of the most striking and curious plants of its extensive family, and one which sooner or later will find a place in every garden, is the *Iris iberica*, of which one form is represented. Its gigantic flowers and curious combination of colour, together with its neat dwarf habit render it as striking as it is pretty. This plant was introduced to English gardens by Mr. T. S. Ware, of the Hale Farm Nursery, Tottenham, who has already bloomed several distinct varieties. The subject of these remarks flowered during the past season in the open ground. It is a native of the Caucasian Mountains, and is found growing at an elevation of from 6000 to 7000 feet. It forms a tuft of glaucous, slightly recurved linear-ensiform leaves, 3 inches to 4 inches long, and produces a stem 4 inches to 6 inches high, surmounted by a large solitary flower. It has proved perfectly hardy, having stood the past three winters without any protection whatever. It seems to prefer a light sandy soil, in which it grows very freely; and it is admirably adapted for almost any position, either on rockwork or in the borders; moreover, it succeeds well as a pot plant. This variety differs from the type form (as figured in the 'Botanical Magazine,' t. 5847), both in colour and size of flower, the true *I. iberica* being larger, with the outer perianth segments more erect, and the spots at the base of a deeper colour, while the inner segments are of a yellowish-green colour, covered with wrinkled dark purple

reticulated bands, and the disk is much larger and of a glossy black colour. There are many varieties of this remarkable species; and no doubt others will flower during the coming summer."—(*Florist and Pomologist*, 3 series, vol. vi., p. 25.)

NEW BOOK.

Handbook of Hardy Trees, Shrubs, and Herbaceous Plants; containing Descriptions, Native Countries, &c., of a selection of the best Species in Cultivation, together with Cultural Details, Comparative Hardiness, Suitability for Different Situations, &c. Based on the French work of Messrs. Decaisne & Naudin (Members of the Institute of France), entitled "*Manuel de l'Amateur des Jardins*," and including the original Woodcuts by Riocreux & Leblanc. By W. B. HEMSLEY, formerly Assistant at the Herbarium of the Royal Gardens, Kew. London: Longman & Co.

THIS very full and not very grammatical title page renders any further epitome of the contents unnecessary, but we may add, that this useful book is rendered more useful by a glossary of terms and a copious alphabetical index. The genera are arranged in the body of the volume according to the natural system. The descriptions are sufficient to enable the cultivator to identify each species, and in a large number of instances the descriptions are aided by good woodcuts. The concluding part of the volume is entitled "*Practical Gardening*," and is its weakest part, for in endeavouring to include a multitude of subjects within a few pages, it does not give the full information on any one which the amateur needs. Vegetable physiology, climate, soils, classification of plants according to size and colour, and ornamental gardening are all included, but only twenty-six pages are devoted to that which the amateur most needs, "*cultural directions*." It would have been a far more highly-prized work, would have commanded a wider circulation, if separate directions for culture had been appended to each genus. We are aware that this would involve slight repetitions, but references to other genera requiring similar treatment where the culture was detailed would avoid much tautology, and the space would be well spent in securing to the amateur, what he loves to have, specially applied directions.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

THE Anniversary Meeting of this Society was held on the 26th of January at Burlington House, Piccadilly, for the election of Council and officers for the ensuing year. Professor Westwood was re-elected President, Mr. McLachlan, Treasurer, Messrs. Grut and Verrall, Secretaries, and Mr. Inanson, Librarian. A very satisfactory statement of the Society's finances and proceedings was read; and the President delivered an address, giving an elaborate account of the progress of the science during the past year, in which he especially dwelt upon the necessity for investigating the fossil Arthropoda, with a view to their positions in the general system of the animal kingdom, as well as the higher branches of the science, such as the embryology, development, metamorphoses, physiology, and economy of insects. A cordial vote of thanks was given to the President for his address, which was requested to be published. The following gentlemen were nominated to act as Vice-Presidents—namely, Messrs. A. W. Bates, S. S. Saunders, and Stainton.

The first February Meeting was held on the 3rd of that month, Henry W. Bates, Esq., Vice-President, in the chair. Mr. F. Smith exhibited a collection of Hymenopterous insects collected about eighty miles from Calcutta, containing a fine new species of *Astata* and several species of *Nomia*. There was, however, no new genus in the collection. Mr. McLachlan exhibited some small quadrangular cases found in the river Dove, in Derbyshire, formed by the larvæ of a species of *Caddice Fly*, which he had supposed might belong to the genus *Cœnis*, but which Mr. Eaton thought could not belong to that group, as he had not found it in the neighbourhood where the cases were met with. Mr. Champion exhibited a large species of *Pulex* taken in a mouse's nest in the island of Sheppey. Mr. Meldola exhibited a living specimen of a *Myriapod* belonging to the genus *Spirabolus* sent to him from San Francisco, also specimens of the large and curious eggs of one of the leaf insects (*Phyllum pulchrifolium*) from Java. A specimen was exhibited of a *Moth* belonging to the family *Noctuidæ*, which was found impaled upon a thorn, most probably by a strike. Mr. A. Müller made some remarks upon some pouch-like galls found on the leaves of Cinnamon plants in Bombay. The Rev. Mr. Eaton read a paper "*on the Hydropitilidæ, a family of Trichoptera*" (*Caddice Flies*). He also exhibited a *Mite* of the genus *Trombidium* from Spitzbergen. Mr. A. G. Butler communicated a monograph of the genus *Gasteracantha*, a remarkable exotic group of *Spiders*

with hard horny coverings to their bodies, armed with singular spines, often much longer than the whole body.

The second February Meeting was held on the 17th ult., the President being in the chair. Dr. Herman Burmeister, the distinguished entomologist, and now Director of the Museum of Buenos Ayres, was elected a member of the Society. A new part of Mr. Hewitson's beautiful work on the *Lycænidæ*, and several memoirs on the *Ichneumonidæ* of Finland, by H. Woldstedt, were presented to the Society. Mr. Bond exhibited a long series of bred specimens of the two closely allied species *Ærouycta Psi* and *tridens*, pointing out some distinctions between them in the perfect state. The larvæ of the latter had been fed on Pear leaves, those of the former fed on different plants. Of the former species he had obtained no dark-coloured specimens such as occurred in *Æ. tridens*. Mr. A. Müller exhibited some cases formed of short bits of sticks cut of equal length and arranged spirally, being probably made by the caterpillars of a species of *Psyche*; also the egg-case of a species of *Montidæ*. The President exhibited some white cylindrical dipterous larvæ, nearly half an inch long, which had been discharged by a patient in a clot of phlegm. He had referred them to the small fly *Psila Rosæ*, the grubs of which are found in Carrots, and he subsequently found that that vegetable had been eaten by the patient. He also exhibited drawings of a bulb infested with three large grubs, which he had no doubt would prove to be those of *Merodon clavipes*; likewise drawings of the large excrescences upon Vines and the Coleopterous larvæ found therein, recently described in our pages; also drawings of the roots of Vines asserted to have been destroyed by *Phylloxera*. Mr. Müller stated that Mr. Riley had discovered that galls upon the roots of a species of Vine in North America had been formed by a weevil of the genus *Baridius*. Mr. Briggs exhibited two series of specimens of the common moth *Anaitis plagiata* taken at the same place in June in different years, the one being of the ordinary summer, and the other of the later autumnal form.

Mr. H. W. Bates read a memoir on the predaceous beetles of Japan collected by Mr. Lewis, by whom an extensive series of insects had been formed in that country, the descriptions of the various families of which have been undertaken by different entomologists. Two hundred and forty-one species of these predaceous beetles were described, of which 118 were quite new. They belonged to eighty-four genera, the geographical distribution of which offered some interesting particulars. Nine genera only (including the singular *Damaster*), were peculiar to Japan. Of the ninety-six genera of these insects occurring in western Europe forty-four occurred also in Japan, whilst fifty-two were unknown in Japan, and thirty-eight of the Japanese genera were unknown in western Europe. The aculeated Hymenoptera contained in Mr. Lewis's collection formed the subjects of another paper by Mr. F. Smith, in which seventy-three species were described, of which forty-nine were new. Twenty-four of them were also found in Japan and China, three only in Europe, and two in North America. Amongst the bees were specimens of the species of honey bee which Mr. Smith had previously named *Apis nigro-fasciata*, which had not been acknowledged as a distinct species by Gerstaecker, but which Mr. Smith felt convinced was quite distinct. Mr. A. Müller contributed a series of bibliographical notices of entomological papers published previously to 1862, omitted in Dr. Hagen's work.

Mr. F. Smith communicated a notice of the recent researches of Drs. Von Schneider and Von Siebold on artificial honey obtained by feeding bees exclusively with malt. The question had been raised whether the substance thus obtained was real honey, and whether, consequently, the bee was able to change malt sugar into honey in its stomach. Dr. Von Schneider having taken up the physiologico-chemical portion of the question, arrived at the conclusion that the carbo-hydrates, sucrose and dextrose, contained in the malt are actually changed by the bee into honey-sugar, and that the malt-honey differs only from ordinary honey in wanting the specific aroma given to the latter by the flowers on which the bees had been gathering. The observation is one of much interest to bee-keepers, as the malt nutriment given to the bees serves for their support as well as for the production of the honey. With regard to the wax, Dr. Von Schneider is of opinion that it is undoubtedly a secretion of the honey bee formed chiefly at the expense of different kinds of sugar, with which, however, a supply of nitrogen was necessary. After these results had been obtained, Professor Von Siebold made a special investigation of the secreting organs of the bee, and discovered three entirely distinct and very complicated systems of salivary glands, two of which are situated in the head, and the third in the anterior part of the thorax, which had been erroneously regarded by Fischer as a lung. Each of them has separate excretory ducts, and is distinguished by a specifically different form of the vesicles secreting the saliva. The minute details of these structures are represented in a plate accompanying Von Siebold's memoir in the "*Bienenzeitung*," No. 23, 1872. These organs are, however, found only in the workers; the queen possessing only a rudiment of the lower system in the head in the form of the two orifices of the ducts,

while the ducts themselves as well as the glands are absent, and the other two systems are much less developed than in the workers. In the drones, or male bees, not even the orifices of the lower cephalic system could be found.

THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 1.

TRUE is it, as a certain poet not unknown to fame wrote long ago, that you can by no means grasp burning coals, even if you think of the iciest mountain to be found on our globe, or on any other. The actual will unquestionably overpower the imaginative, still it must be conceded that in some cases the faculty of the imagination helps to dispel or lighten our troubles. It would be as unreasonable, in the instance of the horticulturist, to expect him to bear with patience or indifference the annoying or seriously injurious attacks of some members of the realm of insects by portraying for his consideration and admiration the beauties of form and colouring which many others display, and, indeed, in some instances the very species which give cause for complaint; but one is glad to find that with the growing intelligence that is spreading amongst gardeners now-a-days, and, let us say it *sotto voce*, among amateur gardeners also (for the amount of scientific knowledge a man possesses is in nowise regulated by the weight of his purse), has come a more tolerant feeling towards the insect world generally; and all the orders, genera, and species of this large division of animal life are no longer, except by the very ignorant, comprehended under one common anathema. Investigation has fully proved that the number of insects hurtful to man's person, his produce, or his stores, if large, is but an insignificant moiety of the whole. Even for the injury we sustain from these, there are certain compensations oftentimes which tend to soften down our indignation or vexation; moreover, we are still finding out that we have ourselves to blame in not a few instances, and the destructive ravages of some insect pest are found to have been ushered in by neglect or inattention on the part of the horticulturist. Even as weeds seem to be sent to spur the gardener to activity, so is it with many insects, they come as warnings to us to take various precautions.

Apart from the interest which may be awakened by insects when we subject them to an individual examination, did it ever occur to the reader how much, not only the rural scene, but the garden, owes to insects from their imparting thereto during the greater part of the year the element of life? If we could sweep away the bees, the butterflies, and all the host of insects which delight in the sunshine of a summer's day, what a coldness and dullness would seem to prevail! Amongst the purposes for which these were created (or evolved?) must surely be reckoned the benefit and gratification of man; and surely he who is employed frequently or habitually in fruit and vegetable culture ought not to lack sensibility to the influences of Nature. "But," says one, "most gardeners have neither time nor inclination to cultivate æsthetic tastes." More's the pity, were this true of the majority, but I scarcely think that it is. From what I have noted of the manner in which they regard their favourite flowers and fruits, I infer that their admiration of Nature, in a general sense, only needs to be cultivated. I have been giving in these pages for some months past a "black catalogue," discoursing in as agreeable a way as I could upon some of the enemies of the horticulturist amongst the insect tribes, and it seems only fair that I should say somewhat about other species which are in no way injurious to the garden. There is not much danger of making gardeners foolishly sentimental, even though they should be led to look upon insects generally with rather different eyes than they have hitherto. Opposed as I am to all wanton destruction of insect life, whether these creatures are endowed with acute sensibilities or not, it must be unquestionably lawful to kill and to take measures to check the increase of those species that we find harmful.

A host of insects, as we all know, are to be seen in motion in gardens (however they may be laid-out, for flower, vegetable, or fruit-culture) during six or seven months of the year. Some of these have undergone their transformations within the limits or in close proximity to the cultivated ground, and even of these only a moiety are prejudicial. Numerous species which resort to gardens by day or night are not bred there, but visit these places in search of the honey of flowers, are attracted thither by fragrant odours, or come to prey upon other species. It must be admitted that when we speak of

"beautiful insects" we must, were it done comprehensively, include in the list some that are harmful in our gardens; but one could hardly expect to win over the horticulturist to give these hearty praise. An abundance, however, remains, without alluding to these, upon which one may comment, and convince any who are as yet sceptics, that in itself the name "insect" is not expressive of what is ugly or disgusting, though largely deemed so in popular parlance. Of course, subjected to microscopical examination, it is true that there is no insect which does not display beauty in some part of its structure; for our consideration, however, we must select such as exhibit it more obviously to the unassisted eye, or with the help of a hand magnifier, an article, by the way, which every gardener should have in his pocket, as it would enable him to destroy many a batch of insect eggs—an act which the most sensitive of all philosophers could not deem a cruel one, though he might grieve over the extinction of the germs of life.

The order Lepidoptera, comprehending the butterflies and moths, though it contains a preponderance of beautiful forms, owing to the wings being adorned with scales, is not the only order of insects which furnishes our gardens with objects worthy of admiration. It is, nevertheless, the order that is likely ever to be the most attractive to collectors of insects, partly, no doubt, because the transformations of the different species furnish much amusement. The splendour of many of those brought from exotic lands, surpasses all that the artist can depict, and even in the muster-roll of our "true-born Britons" are included some that the eye is never tired of gazing upon. Amongst the smaller species, known to entomologists collectively as the Tineina, we have examples of colouring which prove that beauty and magnitude do not necessarily go together; and in some instances the wings are bespangled with brilliant markings resembling gold or silver.

Hosts of insects of the Dipterous order are seen on the wing in gardens, mostly during the day, and we find these almost universally remarkable for the gracefulness of their structure. In many species the bodies are banded with bright colours, and sometimes the wings are more or less variegated. In the order Hymenoptera are comprehended not only the bees, wasps, and ants, but other species which are commonly known as "flies," as for instance the Gall-flies (in part), and many parasitic species called "ichneumons," the larvæ of which feed on other living insects. The latter are often of great utility, and the imago developed from them are wonderfully active, and very elegantly formed. In the same order the various Saw-flies are placed, and though we find some singular shapes amongst these, as a large proportion of them are inimical to the gardener, we can scarcely expect him to view them with favour.

Beetles are to be observed in flight both during day and at eventide, and we are constantly seeing species of the Coleopterous order running or walking upon leaves and twigs, and others as busily engaged upon the surface of the ground, while the spade, rake, or hoe brings to light some subterranean individuals. Bright colours are only found here and there amongst beetles, but many of them excite our interest on other grounds. Then again, amongst the Neuroptera, we find the Dragon-flies resorting to gardens, especially those near streams or ponds, and the number of insects they destroy is unquestionably large, including some that are noxious to the gardener. Most of these are very beautiful in their perfect state, though after death much of their beauty disappears. The Caddicee-flies, also to be observed in gardens occasionally, have very delicately-formed wings, and in some the antennæ are curiously ringed; these are frequently mistaken for moths. Even in the less-favoured orders, Orthoptera and Hemiptera, we might enumerate many beautiful insects. All bugs are not disgusting, for amongst the vegetarians are some as handsome as they are harmless, especially in the genus Pentatoma. Still it must be admitted that the odour of some is not *recherché*, though in the case of one or two it has been said to be agreeable. A few of the Hemipterous insects destroy other insects. In this tribe, however, is the aphid, and several others, well-known as foes to various plants in and out-of-doors; and, as observed, in the Orthopterous order (leaf-insects, grasshoppers, crickets, locusts), where we have some of the strangest shapes there is beauty also to be seen, as for instance in that splendid fellow the great green grasshopper, which we have known to skip from the fields to the adjacent garden, and lead a youngster a long and fruitless chase among shrubs and banks of flowers.

I shall venture here to remind the reader of the fact, illustrations of which will crop up from time to time as we

proceed, that many insects are useful to the gardener, besides those species which prey upon other insects. Even in the Lepidopterous order we might point to various species amongst the smaller moths, which feed upon fallen and decaying leaves, towards the disintegration of which they assist, and thus help to supply leaf manure. In the Dipterous order, also, many instances might be adduced, where the larvæ or maggots induce decomposition in the substances on which they feed, and these then evolve different gaseous products than they would have done had they been undisturbed; the result is that much which might have been injurious to vegetation through its effects on the atmosphere is thus disposed of. Both bees and flies play an active part in assisting in the fertilisation of flowers, and the maturing of fruits. As Mr. Walker justly observes—"Diptera generally being more quick-witted, sharp-sighted, or impulsive than any other insects, take the lead in migration, and in extending their influence over new regions. A large proportion of them are especially useful in the development of flowers, and thus advancing vegetation." This, in fact, is like skirmishers in an army; while the bustling noisy bees are rather to be compared to the soldiers in the heavy regiments, though indeed some of the Hymenoptera are as agile and slender as their Dipterous relatives.—J. R. S. C.

APRICOT SHEDS.

As requested, I send you two views (figs 1 and 2) of my new shed for the growth of Apricots. Though shown open at the

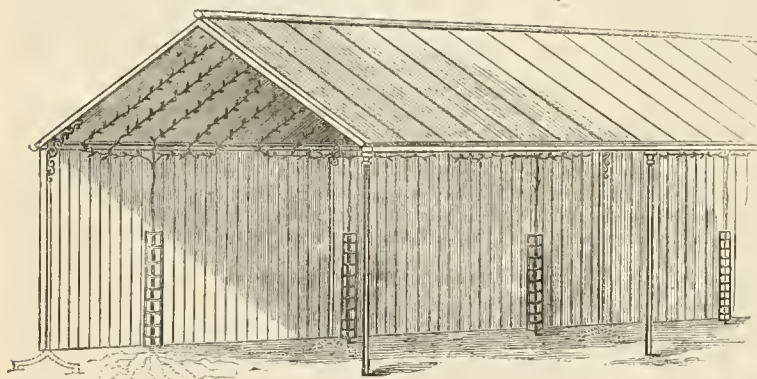


Fig. 1.—Apricot Shed.

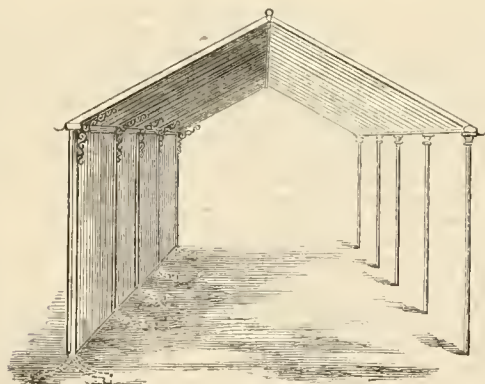


Fig. 2.—Apricot Shed—End View.

ends, both are boarded as high as the sides, the gables being glazed like the roof, the front only being open. As it is intended for a pot shed alone, it will be seen the holes of the trees are guarded to prevent injury to them. All the pillars are of iron, those at the back being Foster's patent standards (fig. 3). The round pillars in front are let into blocks of stone below the soil. Iron spouts on both sides catch the rain water, and the whole forms as strong, light, and durable a structure as could well be built. It is open to the east, which is, I think, the proper aspect. East winds do no harm to the Apricot, whilst the tree's roots are the better of a warm border. Again, thus situated, the tree boles are shaded from the hot sun, a

great advantage, as many fruit trees suffer on a south wall during hot weather from the sun falling on their unprotected stems. The bole of a tree growing in a state of nature is always shaded—at any rate whilst young.

Having seen the success which has followed this mode of culture, I am convinced the Apricot finds in such a glass shed as mine all it requires—plenty of air, indeed plenty of wind, protection from rain and snow, or rather, I should say, from ice and snow, for I believe ice formed on its branches is often fatal; and lastly, plenty of light and sun for its leaves and fruit. As its roots will extend outside it will also find plenty of food and moisture.—J. R. PEARSON, *Chilwell*.

ACACIAS.

THE Acacias are a genus of fine-habited greenhouse shrubs, and for the most part yellow-flowering. Very free in flowering, and producing their golden balls or brushes, in the winter and spring months they are deserving of a place in most greenhouses, in fact no greenhouse is so small but it ought to possess at least three kinds, in order that this family may be represented from the commencement of winter to the close of spring.

Acacias are among the most easily cultivated of greenhouse plants, requiring a compost of light fibrous loam three parts, and one part sandy peat and leaf soil, with a sixth of silver sand. Good drainage is necessary, but it need not be more than one-sixth the depth of the pots employed. The best

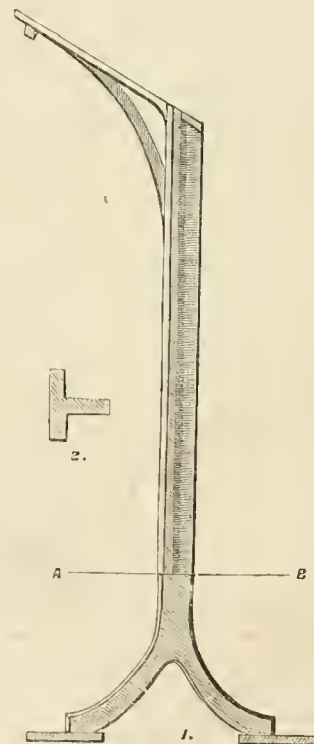


Fig. 3.—Foster's Patent Standard.

time to repot is in spring or when the flowering is over, and the plants are beginning to make fresh growths. If, however, any pruning be required it should be done when the plants are going out of bloom, and as they will bear pruning well there can be no excuse for keeping straggling specimens. It is better, however, not to allow a plant to become badly furnished, and then seek to bring it into form by severe pruning. At its best, severe pruning is bad practice, and on old plants it is attended with risk. The training should commence with the early stages of the plant's growth, and be continued throughout. The pruning needed ought only to consist in shortening irregularity of growth, which may be done after flowering, and afterwards during growth, in stopping any shoots disposed to grow too straggling. In this way good well-furnished plants may be formed, and when they become old,

ill-formed, and weak it is better to replace them with young and vigorous subjects than to seek by any severe manipulations to restore an old plant to good form. It is better to raise fresh plants from seed than to grow on weakly plants from cuttings, or seek to renew an old one by cutting back.

The seeds should be sown, if they are home-saved, as soon as they are ripe in pots filled with equal parts of light loam and sandy peat, with one-fourth of silver sand; drain well, placing the rougher parts of the compost over the drainage, and fill to within half an inch of the rim with sifted soil. Make the surface even, press it gently, scatter the seeds thinly, and cover them a quarter of an inch deep with fine soil; then water gently, and place the pots on a shelf in the greenhouse. In a few weeks the plants will appear, and should be potted-off singly in 3-inch pots when they show the first leaves, in addition to the seed leaves, to which last they should not be potted nearer than half an inch, and in the compost named before. Place the pots on a shelf in the greenhouse, and keep the soil just moist. By the following spring the plants will be thriving young stock, and should be encouraged to grow by more copious supplies of water, and sprinklings overhead morning and evening. When the roots become matted round the sides of the pots shift the plants into $4\frac{1}{2}$ -inch pots, which will be required by May, and in July they may have 6-inch pots. The seedlings should have the leading shoot stopped when it has grown a foot, and the side shoots when they are 6 inches long. Keep them well stopped, and so secure a well-branched plant from the commencement; but do not stop the shoots after July. If a pyramid be desired the shoots resulting from the stopping must be regulated, tying them out where they are crowded in the direction in which they are required, and selecting the best as leader, train it erect. In this way the plants may be kept in good form. Whether it be bush or pyramid is desired, judicious pruning after flowering, with stopping irregular growths afterwards, will enable us to produce good specimens.

If the seeds are not sown until spring, March being the best time, they should be soaked twenty-four hours in water at a temperature of 90° to 100°, placed in a hotbed, and treated like those sown when ripe, only they must be potted-off singly, and retained in the hotbed until established, hardening-off before placing in the greenhouse. The young plants succeed better in cold pits during the summer months than in a greenhouse. Being subject to red spider, free syringing is beneficial during summer. I do not advocate placing them out of doors in summer, but I have found doing so conduces to the destruction of white scale, to which these plants are liable. I imagine the benefit derived from rains in a great measure arises from the ammonia and nitric acid so brought down invigorating the plants. My plants, however, have no scale; therefore they are kept constantly under glass.

The following species and varieties are especially worthy of cultivation—viz:

* *Acacia oleifolia elegans*.—The leaves simple, pale glossy green. The plant is of strong free growth when young and rather straggling, but when it becomes older—say three or four years—is not strong-growing, producing numbers of fine pendant shoots, giving it when trained with a stem 6 feet high a very fine appearance, a drooping head reaching almost to the pot. It is a very desirable plant for pillars or for the rafters of the greenhouse or conservatory. The flowers are in globose heads, very abundantly produced, sometimes in September and on through the winter, attaining its best generally in February. It is in my opinion the finest of all.

* *A. longiflora magnifica*.—Leaves, long and pointed; habit, stiff and erect, but well branched, forming a good pyramid. The flowers are borne in long spikes of a bright clear yellow, about February or March. This is probably the most noble of *Acacias*.

* *A. pulchella*.—The leaves are fine but not large, giving the plant a very elegant appearance. It is of free growth and erect, forming a good pyramid or bush, and is armed with thorns. Flowers in globose heads, produced in April, earlier or later according to the temperature and condition of growth. When in flower it is a mass of bright yellow.

* *A. Drummondii*.—Leaves slightly divided; habit rather slender, and well branched, forming a good bush. The flowers are in cylindrical spikes, short, and numerous, of a bright yellow. It flowers in March and April.

* *A. armata*.—Leaves entire, thickly set on the branches with bundles of hair-like spikes. Flowers in globose heads, very abundantly produced in March and April. It is one of the best. Pyramid or bush.

* *A. hybrida*.—Leaves entire, longer and farther apart than in *A. armata*; flowers in globose heads, bright clear yellow, pro-

duced in February and March. Of diffuse habit, it is better suited for a bush than pyramid.

* *A. lophantha*.—Leaves large and very finely divided; habit stiff and erect, the plant making several feet of growth in a season. If kept potbound its growth is checked, and it then flowers freely in clusters of a pale straw colour.

* *A. platyptera*.—Leaves included in the stem or shoots, having a Cactus-like habit. Flowers very abundant in globose heads in November and December. It is a mass of bloom in its season, and forms a fine spreading bush.

* *A. grandis*.—Leaves finely divided, rather small; habit stiff and erect, forming a good pyramid or bush. Flowers globose, bright deep yellow in March or April.

* *A. asparagoides*.—Leaves simple; habit graceful and Asparagus-like. Flowers globose, profusely produced in March or April.

* *A. floribunda*.—Leaves very fine and abundant, the flowers not less so, of a bright yellow colour, produced in spikes in April or May.

* *A. cultiriformis*.—Leaves knife-shaped and silvery, of strong habit, requiring abundant room. Flowers yellow in April.

A great many other *Acacias* are worthy of cultivation. Of those named, such as are distinguished by an asterisk are the best in my estimation.

I may state that I have three plants of *A. Cumminghami* from seed received through a correspondent of this Journal two years ago, which have large, bright green, entire leaves, the habit erect. It is very distinct in foliage, but as I have not seen the flowers, I am unable to say what it will prove as a flowering plant.—G. ABBEY.

NOTES AND GLEANINGS.

At a recent meeting of the ROYAL BOTANIC SOCIETY, it was decided to erect a new range of houses for the collection of economic plants.

— The post of SUPERINTENDENT of HAMPTON COURT GARDENS is still vacant. The salary is £130 per annum, with apartments in Hampton Court Palace. Candidates, who must be between the ages of 30 and 45, should apply to the Secretary, Her Majesty's Office of Works, 12, Whitehall Place, S.W. It was currently believed that Mr. Carmichael, late of Sandringham, would have been appointed, but we understand that though accepted by the Board of Works, the Civil Service Commissioners, while quite satisfied with his recommendations and abilities, refused him, as he somewhat exceeded their limits as regards age.

— At a recent sale of ORCHIDS, on Thursday last, at Mr. Stevens's Rooms, King Street, Covent Garden, a sum of £430 was realised for the owner, Mr. W. C. Dixon, of Beverley, who parted with them to make room for other subjects. The following prices were realised:—*Vanda gigantea*, £3 3s.; *Vanda Denisoniana*, twenty-one leaves, £8; *Angraecum sesquipedale*, five flower-spikes, eight blooms, 2 feet high, thirty-eight leaves, £14 14s.; *Calogyne cristata*, 2 feet 6 inches across, finely flowered, £13 13s.; *Cattleya maxima*, fine variety, £2 to £3 3s.; *Oncidium macranthum*, £2 4s. to £3; *Odontoglossum Andersonii*, fine variety in flower, £11 11s.; *Dicksonia antarctica*, 7 feet stem, £6 6s. The next, several thousands of fine bulbs of *Lilium auratum* were sold at the same place, together with other Lilies and seeds of Conifers, bringing altogether £359.

— MESSRS. TEUTSCHER & Co., Colchester, have a sale at Messrs. Stevens's on the 10th, of a NEW FRUIT TREE from Japan, the PERSIMMON, in eight varieties. It is the first time this tree has been offered in Europe. There have to be sold 105 trees received from Mr. Kramer, also some new and rare Lilies, Wilsoni and Krameri from Japan, Michauxii, Humboldtii, Puberulum, and Washingtonianum from North America, with Colochortus and Erythronium. The fruit tree is a *Diospyros*, respecting the proper name of which there has been some controversy; M. Carrière calling it at first *Diospyros Kaki*, afterwards *D. costata*; and M. Decaisne, who objects to both of these names, *D. Schi-tse*. It is a native of Eastern Asia, and has bright orange-coloured fruit, which, in the climate of Paris are from 2 to 2½ inches in diameter, and have an Apricot flavour, blended with that of the Medlar. It will probably succeed against a wall in the warmer parts of this country.

— THE PHYLLOXERA continues to attract much attention in France. M. Marcé mentioned a few days ago in the Paris Academy that, having kept during some of the winter months roots taken from a Vine which had been attacked, he had ascertained that the Phylloxera may easily be developed, even in

winter, at a temperature comparatively low (9° or 12° Cent., was that of the apartment) on weak and dying roots which have already been covered with mould. In connection with this subject, M. de Luca also called attention to the fact that in the neighbourhood of Naples, the volcanic earth from the Solfatara of Pozzuolo has of late been used with very good results against the old Vine disease—oidium. It contains sulphur, crystalline and amorphous, a little sulphuret of arsenic, and porous volcanic matters. Placed in moderate quantity about the Vine stock it makes the vegetation more vigorous, kills insects attached to the roots and external parts, and improves the Grapes, both in quantity and quality. The Phylloxera has not yet appeared in Italy. With reference to destroying the insects by submersion, M. Faucon thinks it would be necessary to keep the ground covered with a layer of water without interruption from fifteen to twenty days in September or October, while the insect is yet in its period of active life, or from thirty to forty days from the early part of November after the winter torpor has commenced. A canal from the Rhone has been projected by M. Dumont for the object referred to.—(*English Mechanic*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

Thin-out the old stools of *Artichokes* and make new plantations. Plant the suckers triangularly at a foot apart, the stools to be 4 feet from each other. If the weather will permit, sow the main crops of *Beet*, plant old roots for seed. The present state of the weather precludes all possibility of getting in the main crop of *Carrots*, but the first opportunity should be taken to do so. Thin-out those in frames. Make a sowing of *Celery* on a slight hotbed for the main crop. When the early-sowing is up give it air at every favourable opportunity. Apply linings to the beds of *Cucumbers* before a great declination of heat takes place. Keep them made-up to the top of the frame so as to dry the atmosphere of the inside, which is usually too damp for the young plants. Let the weather be what it may, give a little air daily; if, windy and cold tack a piece of thin canvas over the frame when open to prevent the ingress of rough winds. Give abundance of air to young *Lettuce* plants in frames, to prepare them for planting out; loosen the earth between the autumn-planted ones. Where *Mushrooms* are grown by fire heat, a constant moist atmosphere should be kept-up by pouring water on the paths and placing pans of water on the flues. Heat the house when in bearing to about 60°. Take an early opportunity of sowing the main crop of *Onions*. Plant-out the autumn-sowing in rows at 9 inches or a foot apart. Get the main crop of *Parsnips* sown as soon as the soil is sufficiently dry to work well. A few rows of *Spinach* should now be sown. Clean and loosen the earth about the autumn-sown if convenient. Avoid getting on the ground while in a wet state, particularly for the purpose of sowing seed. Clean all the Cabbage tribe from dead leaves, and where slugs are very numerous lime the whole garden during damp weather.

FRUIT GARDEN.

Take care that all newly-planted fruit trees are securely staked and mulched, and that the blossoms of the early kinds are protected in due time. Take advantage of dry weather to draw away the soil from the stems of Gooseberries with a hoe for 2 inches in depth and 2 or 3 feet in diameter, for about this time the black army, or what is generally termed the Gooseberry caterpillar, will begin to be on the alert. Sprinkle the space cleared with soot and wood ashes, returning the earth quickly with the back of the hoe or rake. This is not only a preventive against such troublesome vermin, but acts as a very stimulating manure to the trees, and the extent to which it has been applied is very perceptible throughout the season.

FLOWER GARDEN.

Need I ask if you have decided upon what plants the beds in the flower garden are to be planted with this season? if not, the sooner the decision is made the better, or you will be too late. Autumn-sown annuals may now be removed to their blooming places, planting three or five in a patch according to the kinds and size. For beds intended to be planted with half-hardy plants a line of annuals may be planted round the outside, and, being pegged down or clipped into shape, they form a neat and gay edging in the early part of the season, and leave the centre of the beds to be thickly planted with such plants as are intended for summer and autumn decoration. Californian annuals, such as *Clarkias*, *Collinsias*, *Leptosiphons*, *Nemophilas*, &c., sown now will bloom almost as soon as those sown in the autumn; indeed, it is a good plan to sow a few seeds at the time of planting, as they will fill-up all vacancies and prolong the season of bloom. Herbaceous borders, if not dressed-over in the autumn, must be attended to immediately, and either fresh compost or manure must be added to all plants that are weakly. Proceed with the planting-out of biennials of all kinds, and

prepare a good-sized piece of ground for a sowing of *Anemone coronaria*, *hortensis*, and *vitifolia*. *Anemones* delight in a strong rich soil and a rather shady situation in the summer. Sow the seed after being well rubbed in sand in shallow drills 9 inches apart, and cover with rich soil from the compost yard. A sowing of Ten-week Stocks must also be made on a warm border, cover with litter or mats at night until the seed begin to vegetate. *Auricula* seed may now be sown; the best compost is sandy peat and leaf soil. Shallow boxes or pans should be filled nearly full and watered well to settle it well, when the seed may be thinly sown on the surface, covering very slightly. The blooms are now rising; mind that the trusses are not drawn by keeping the lights on too much. Still have a sharp look-out for snails among *Polyanthuses*. With a very small hand-fork keep the surface of the bed loose, taking care not to disturb the fibres. If grown in pots the soil must be occasionally stirred, keeping them moderately moist. In purchasing *Polyanthuses* it must be borne in mind that Hutton's Earl Grey and Clegg's Lord John Russell are one and the same flower, the former being the proper name. The Tulip beds must be carefully gone over and the cracks in the soil filled-up. A blunt stick is a simple though effectual instrument to loosen the soil between the rows. Carnations are now beginning to move, and diseased plants which have struggled through the winter thus far are dying-off.

GREENHOUSE AND CONSERVATORY.

As the present unfavourable weather must prevent out-of-door operations being proceeded with, it offers a good opportunity for the employment of a few extra hands in examining the roots of the majority of large specimen plants usually deposited in the conservatory during the winter months. Wherever it appears necessary let them be pruned and shifted, but as many of them may already be in pots or boxes quite as large as it is perfectly convenient to move about, or suitable to their summer stations, they may be beneficially treated by having as much of the old soil carefully removed from the sides of the pots or boxes as the state of the roots will allow, and afterwards filling-up the cavity made with fresh and suitable compost. Many plants after arriving at a mature state of growth may be kept in health for years by a judicious application of this mode of treatment. Large plants of *Geraniums*, *Calceolarias*, *Cincorarias*, with a host of similar specimens intended either for exhibition or early May flowering, will now require every attention; let them be frequently turned round that all sides may derive the same advantage from the light, and appear when in full bloom to have received equal treatment.

STOVE.

Cuttings of all free-growing softwooded stove plants, such as the different showy varieties of *Justicia*, *Begonia*, *Aphelandra*, *Poinsettia*, &c., will now strike root readily in a brisk bottom heat. They make useful and handsome plants if well managed for autumn and winter flowering.

PITS AND FRAMES.

Here the work needs no pointing out; the means of providing room after the plants are potted is the greatest difficulty in most places. Calico dressed with Whitney's composition, at a cost of 5d. per yard, is a material required for plants after they are first potted-off. Choice annuals such as *Brachycome iberidifolia*, *Viscaria oculata*, *Mesembryanthemum tricolor*, *Portulaca*, *Clintonia*, and the like, should always be potted-off as soon as they are sufficiently large to handle, and afterwards be placed in a warm moist atmosphere, with plenty of air in mild weather, until they are properly established. Sow in a brisk heat *Martynia fragrans* and *diandra*, the different varieties of *Thunbergias* and *Ipomæas*, *Convolvulus major* and *minor*, and, where they are admired, the common yellow and other *Lupins*.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

LITTLE work could be done outside. Owing to heavy snows and drenching rains our ground is like so many Sloughs of Despond, into which a man's foot enters only to sink.

Celery that has been remarkably good is now for the first time beginning to give way and show signs of rotting. Of course it is an easy matter to be wise behindhand. Had we known the great features of the winter we would not have earthed or littered our later *Celery* so much. Without that care it would have been injured by frost if the weather had been at all severe. To secure early *Celery* requires a considerable amount of care, and unless the *Celery* is valued we would not advise the trouble. We have had it very fine at the beginning of July, but after all the labour we found it was seldom estimated in proportion to the labour bestowed on it. Do what you may with it *Celery* never grows so freely as after the beginning of September, so that good winter *Celery* can be had with but little trouble—a fact we have helped to make known to farmers and numbers of readers, who care little for *Celery* until the first frosts of November have made their appearance. Like Scotch

Kale and Savoys, country readers will persist in the notion that Celery, too, is all the sweeter and more tender after having had a breeze of frosty air over it. We would not like to dispel a simple illusion if that tended to convey happiness; but on the whole we must say that we have never partaken of sweeter, more nut-like Celery than we have done in July and August. To have it fine so early the seed must be sown at latest in the beginning of March, and the plants should never be allowed to stand still, but be encouraged with heat until May. When planted out finally they should have a little shade in bright sunshine, such as thinly-wattled hurdles placed over them, to resemble somewhat the natural advantages early plants would receive when protected by the sides of a hedge bank. According to circumstances we must modify our arrangements, but we have had finer blanched Celery in the first days of July than we have had in September and October. The great drawback of huge early heads is that the water finds its way in, cannot easily escape, and rottenness or discoloration at the core is apt to take place—one of the reasons that led us to give up growing Celery like a man's thigh for size; and to rest thankful with compact heads half the size. Such large early Celery can only be obtained when the plants can have mild hotbed treatment from February to the middle of May.

We have sown in January, February, and March; nay, when anxious to be forward, which we are not now, we have sown in December in a mild heat, say 50° to 55°, and it mattered very little as to the produce, if simple matters to which we have previously referred, such as avoiding checks, were observed. From seeds sown in December and onwards to March, we have had fine plants without a run or stalked head. From seeds sown from March to May we have seen plenty of stalked heads quite unfit for anything where better could be got, just because the nature of the plant and the precautions necessary to insure success were lost sight of.

Our chief reliance, except on hardy vegetables, as Brussels Sprouts, Cottagers' Kale, Curly Scotch Kale, the Cabbaging and Veitch's varieties, Savoys, &c., all benefited by a little frost, has been our Sea-kale, Rhubarb, Asparagus, and Mushrooms; but we have said so much on these lately that we must refrain for the present, merely noticing that successions must be regulated by the demands of an establishment. Complaints are often made that these vegetables are supplied in quantities greater than can be used without waste, and then when there is a sudden access of company, there is not enough to meet requirements. No gardener can meet such extremes, as respects Mushrooms, &c. We have often had fine crops to supply the wants of a company expected, but when the company came three weeks after the time specified, the cream of the crops was over. Under such circumstances, when ladies and gentlemen complain that they might as well go to London market at once, we say, "Let them try." We say advisedly, that no private establishment, unless the means are ample, can equal the supply of Covent Garden. If that acknowledgment should lead to results that many would deprecate, that is not our fault. The true balance will come in its own time. The illusion we wish to dispel is simply this; that of a lady or gentleman in the country expecting to get from a garden at a notice of a day or two, what can be obtained from Covent Garden Market, which has the whole country to depend on. We know of numerous cases where proprietors of gardens have resolved largely to curtail them, not because they do not have plenty of produce, but because they do not get the abundance at the right time. "Here are Mushrooms, Sea-kale, Rhubarb, and Asparagus which we care nothing for, and in excess, and in a fortnight, when we could not have too much, there is less than is needed. Why should we not pretty well shut-up our gardens, deprive ourselves of these luxuries, and send to Covent Garden when we have company?" We state the matter broadly, it is of no use blinking this great matter. We believe when rightly used the home garden will be found more beneficial than ever; but then the time will have arrived when it will be found as essential to tell the gardener of contemplated visitors, as the housekeeper, steward, or cook; in fact, much more so, as each of these can soon prepare, as the matters of preparation are more within reach.

Meanwhile, we recognise the fact, that if the heads of establishments, either really or truly, affect a disregard for all such luxuries as we have indicated, and care nothing at all for them except when there is company, the best plan is to secure these things from Covent Garden, or some other general market at once, and not attempt to grow them at home at all. For the benefit of all parties we wish clearly to indicate two facts. First, Such things in a private establishment cannot be had at a day's notice; and secondly, the gardener should not be left to glean information of contemplated visiting parties how and where he can. A man really worth anything will be too independent for such underhand knowledge. The gardener is the last person whom it is deemed proper to consult. Theoretically and practically, we know that many things might be considerably advanced or retarded if due notice had previously been given, and

without it the gardener is working in the dark. One great fact we must record with pleasure is, that if in some large places there is a tendency to depreciate an abundant supply, except on a few occasions, there are scores of little places where the owners feel a great pride in having everything of a gardening nature brought from their own garden.

FRUIT GARDEN.

As opportunity offered went on with pruning. Out of doors we do not care about being too early, as we like as well to see how the birds treat us. Orchard houses are now mostly pruned and cleaned, though the walls partly want limewashing, owing to a press of out-door work when it could be got at. This extra out-door work is often a great drawback, and is not enough considered in many places. With hardly a gleam of sun early Peaches seem to have set very fairly, much, we believe, owing to giving them a low temperature, and allowing the heat to rise when there was a gleam of sunshine.

ORNAMENTAL DEPARTMENT.

Hotbeds will now be necessary in order, within a fortnight, to sow lots of small and tender annuals, and for striking myriads of cuttings. If these be ready by the 10th inst. most things will come in ample time, as it is much better that the plants should be reared, pricked-off, and receive little check until they are turned out into warm soil than if sown earlier, and allowed to be chilled and stunted by standing about for weeks as specimens of neglect.

We have endless inquiries as to raising tender seedlings. Of course where there is hot water, or even nice dung beds, we need give but few hints. Even in such cases, however, we have found it to be a great advantage to use 4 and 6-inch pots, fairly drained, then filled to within 1 or 1½ inch of the top with rough, finer, and then the finest soil. Water, and allow the water to drain well until the surface is dryish; then sow, slightly cover, put over the top a square of glass, and shade until the seedlings appear. Now, this principle can be acted on where there is no hotbed, but a little window, a fireplace, and a teakettle. Put 2 or 3 inches of drainage in a 6-inch pot, prepare the pot as above, sow and cover with a square of glass, then set the pot in a saucer, and about twice in the day fill the saucer with hot water, but not to reach so high as the drainage inside of the pot. Try, as we did years ago, and many will be surprised how nice and genial, and even rather equable, heat may thus be obtained. Tie a sheet of whitish-coloured paper round the pot and saucer, and the heat from the saucer will be maintained much longer. We have used 12-inch pots with saucers to suit, but then we put small pots inside, placing these 2 inches from the rim of the large pot, and covering the rim over with a square of glass, which we could move or reverse at will.

For a person much interested, it is not much labour to empty out the cold water of the saucer or plate and renew with fresh. In this case too, a covering of whitish paper, or calico, is an advantage, as preventing radiation of heat. These are the simplest modes we know, and may be adopted in any cottage or workshop. The next simplest and best is to have a box, as alluded to lately, and have a vessel for water underneath, on the table-drawer principle. Where there is anything like free access to hot water, in the shape of a good-sized teakettle, twice and in extreme cases three times in twenty-four hours, we consider the plan simpler in every way than heating such little vessels with candles, oil, or gas, though a gas jet with a pipe passing through into the open air is also very simple. The worst of gas is, that without this care no plants, old or young, will flourish where its fumes escape.

For general treatment of plants see previous numbers.—R. F.

TRADE CATALOGUES RECEIVED.

Sutton & Sons, Reading.—Suttons' *Descriptive List of Grass and Farm Seeds.*

Teutschel & Co., Colchester.—*List of Japanese Lilies, Orchids, &c.*

F. & A. Dickson & Sons, 106, Eastgate Street, Chester.—*Catalogue of New and Select Farm Seeds.*

Isaac Brunning, 1, Market Place, Great Yarmouth.—*General Seed Catalogue.*

J. Coombs, The Ferns, Enfield.—*Catalogue of Cuttings of Geraniums.*

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

Books (*Ignoramus*).—Our "Garden Manual" will suit you. You can have it free by post from this office if you enclose twenty postage stamps with your address.

GREENHOUSE PLANTS (*Mrs. Little*).—To go through all you require would fill a volume. Keane's "In-door Gardening" probably would suit you.

CYCLAMEN CULTURE.—At page 179, and in the sixth line in second paragraph, in speaking of pricking out the plants into boxes, read—"I prefer them to separate pots as requiring less space;" and I may here observe that I prefer boxes also on account of their requiring less water, and being more quickly

moved from place to place if necessary. Later in the season the plants are potted off singly, and treated as described.—J. ROBSON.

REMOVING PARTITIONS, &c. (C. T.).—You cannot legally remove them.

TABELLS.—No charge is made for writing the names of plants by the maker of Vase's labels.

SEEDS RETAINING VITALITY (A Norwich Ignoramus).—In Johnson's "Science and Practice of Gardening" are very full details. You can save the volume from our office by post if you enclose 3s. 4d. in stamps with your address. The following is a brief extract:—"The seed of the Coffee shrub loses all power to grow, unless sown within a few weeks after it has been gathered, whilst that of the Melon improves by being stored for one or two years, and Celery remains capable of germinating for five times the last-named period. These and some other instances within our knowledge demonstrate that the more starchy and other matters, into which nitrogen does not enter as a constituent, that a seed contains, the longer, usually, will it retain its power to grow; and two instances are, common Rice and the Kidney Bean. Rice contains 85 per cent. of starch, and will retain its vegetative powers for many years; whilst Kidney Beans, which contain one-third their weight of amino-vegetable matter and other constituents, of which nitrogen is a component, will not vegetate healthily a second season. The following list, furnished by the late Mr. Loudon, shows the greatest age at which some of our common garden seeds germinate freely; and this result of experience is quite concurrent with our knowledge of their chemical constitution:—*One year.*—Peas, Beans, Kidney Beans, Carrot, Parsnip, Oraches, Herb-patience, Rhubarb, Elm, Poplar, and Willow. *Two years.*—Radish, Salsify, Scorzera, Purslane, the Alliums, Cardoon, Rampon, Allsander, Love Apple, Capsicum, Egg Plant. *Three years.*—Sea-kale, Artichoke, Lettuce, Marigold, Rice, Rosemary. *Four years.*—Brassicas, Skirret, Spinach, Asparagus, Endive, Mustard, Tarragon, Borage. *Five and six years.*—Burnet, Sorrel, Parsley, Dill, Fennel, Chervil, Hyssop. *Ten years.*—Beet, Celery, Pompan, Cucumbers, Melon."

VARIATED IVY CULTURE (W. B.).—The plant should be grown in light rich soil, and if in a pot the latter must be well drained. The plant ought to be kept well supplied with water when growing, the soil being kept moist at all times. Part of the shoots may be allowed to grow over the sides of the pot, and others be trained to a stake fixed in the pot. It thrives better planted out against a wall, or in a box, vase, or basket, disposing the shoots over the surface. Sprinkle overhead with water twice a day in hot dry weather. A partially-shaded position is more suitable for Ivies than a hot sunny one.

EVERGREEN FOR ABOUR (P. J. D.).—We do not know of any evergreen climbing plant except Ivy, the best kinds for your purpose are the Irish (*Hedera canariensis*), common English (*Hedera Helix*), Finger-leaved (*Hedera digitata*) and Rueger's (*Hedera Ruegeriana*). Ivy is unquestionably the finest of all evergreen hardy climbers. The only other plant of an evergreen character we can advise is *Cotoneaster microphylla*. It has white flowers in May, followed by bright red berries, which are very ornamental in winter. We should prefer the Ivy. The Ivies should be planted 3 feet apart, and the *Cotoneaster* at the same distance, digging the ground well, and mixing with it some rich compost, or well-decayed manure and leaf soil. Add some sand if the soil is strong. Plant now or during March.

RED CLIMBING ROSES (Idem).—These are climbing Roses. Ayrshire—Queen, purplish crimson; Bonrault—Anadis, purplish crimson; Gracilis, rosy red; Hybrid Climbing—Queen of Prairies, rosy red; Multiflora—Rubra, red; Russelliana, crimson; Sempervirens—Adelaide d'Orleans, pinkish rose, and Reine des Français, flesh-tinted rose. Many of the Hybrid Perpetuals are free-growing, and are fine for pillars or trellises, but, as a rule, they do not succeed well against warm walls.

PEACH-TREE APHIS (Hampshire).—The out-door trees which are subject to attacks of aphids we should have thoroughly protected from cold by projecting coping boards, and canvas coverings to be let down at night and on frosty days, but to be withdrawn whenever the weather is mild. The coping boards should be put on at once, and the covering ought to be in readiness to put on when the flowers expand. Continue to keep them over the trees during frost until the end of May. When the aphids appear we would syringe the trees on a mild evening with tobacco water, made by pouring one gallon of boiling water over 2 ozs. of the strongest tobacco, covering closely, and straining the liquor when cool; then add 2 ozs. of soft soap to every gallon. When the soap is quite dissolved apply the liquid to the trees, wetting every part. It may be needful to repeat the application. As your soil is light we should manure liberally with cow dung, syringe well in hot weather, and water copiously in dry weather from the end of May until the fruit was ripening.

CYCLOPS CULTURE (X. Y.).—We grow our Cyclamens in a compost of two parts light turfy loam, one part leaf soil, half a part sandy peat, and half a part of very old manure, the whole chopped up and made rather fine, adding a fifth part each of pots broken very small and silver sand. Drain the pots well, say to one-fourth their depth, and cover the corms entirely with soil. The plants should be kept in a greenhouse or pit near the glass, and be well, but not excessively supplied with water up to the end of May; they should then be placed in a cold frame, and have no more water than enough to keep the leaves fresh. Repot early in August, return to the cold frame, and keep moist, but admit air freely. At the end of September remove them to a house or pit where they can be accommodated near the glass, and have a temperature of 45° to 50° at night and in dull days, allowing a rise of 10° to 15° on clear days, whilst admitting air freely.

CUTTING DOWN HEDGES (Idem).—The best time to cut down a holly hedge is early in April. The quick hedge should be cut down at once.

PLATYCEMUM GRANDE FROM SPORES (An Old Subscriber).—It will grow from seed. The spores should be sown now, or as soon as they are ripe. Their ripening is indicated by their falling from the frond when it is touched. Fill a pot or pan to three-fourths its depth with crocks, then fill it to the rim with a compost of equal parts sandy fibrous peat and sandstone in pieces between the sizes of peas and hazel nuts, and a quarter of a part of silver sand. Press firm, and raise it in the centre rather high, covering the surface with a quarter of an inch thick of the above compost sifted, pressing firm, and watering well. Let the pot stand a few hours, then press again and water, and whilst wet dust the surface with the Fern spores, brushing them off the frond with the hand. Cover with a bell-glass just fitting within the rim of the pot, which should then be set on a wet or moist bottom. The parts round the pot should be sprinkled with water frequently, in order to lessen the necessity for repeated waterings. A shaded position should be afforded, and a temperature of 65° to 75° given the plants, which may be placed in the stove. The surface must be kept regularly moist, and this without watering on the surface so as to remove the spores. Water should,

therefore, be only applied through a very fine rose. When the plants appear air may be given by tilting the glass, and when they can be handled pot them off singly, and place them in a close moist frame in the stove, or cover them with a hand-glass until established; then admit air, and place them on blocks of wood, or plant in baskets, inverting them when the plants become established, or plant out in rockwork.

FRANCISCEA PROPAGATION (Idem).—Take the points of the growing shoots when their base is rather firm, and cut them over below a joint, removing the leaves from two-thirds the length of the cutting, which may be 3 or 4 inches long, and insert them to that depth in equal parts of sandy peat, loam, and leaf soil, with silver sand, surfacing the pot with half an inch of silver sand. Water gently, press firm, and having put in the cuttings round the sides of the pot, cover them with a bell-glass fitting just within the rim of the pot. Plunge the pot to the rim in a bottom heat of 75°. Keep it close, moist, and shaded, but examine the cuttings frequently, and if they are very wet admit a little air by tilting the glass, so as to allow of the moisture passing off. When they are rooted, as they will be in about four or six weeks, admit air freely and harden them off. Pot singly in 3-inch pots, and place them in the hotbed for a few days, then remove them to the stove, potting them as required.

MELONS IN GREENHOUSE (P. O.).—Unless you can convert your greenhouse into a stove the prospect of your growing Melons is not great. It is useless to try to grow Melons unless you can command a night temperature of 60° to 65°, 70° to 75° by day without sun, or with a small amount only, and 80° to 85° or 90° with sun and an abundance of air. Those temperatures you will command easily enough during June, July, and August, but so far from your house being a greenhouse it would be a stove, and the greenhouse plants would be much injured if subjected to so high a temperature. It will be different if you can clear out the plants. In that case we should sow the seeds in the third week of April in a hotbed, pot the plants singly when their rough leaves were just visible, grow them in the hotbed, stop at the second rough leaf, and when two shoots appeared select the strongest and cut the other away. The plants should be shifted into larger pots as necessary, and before the roots are very much matted around the sides. The shoot should be supported by a small stick, and should not be stopped until it has grown to the desired extent, which may be 4 to 6 feet, more or less as required. If the plant is trained to a stake we should stop it after it had made six leaves, and the side shoots, as they show fruit to one joint beyond it. The pots should not be less than 11 inches, and need not exceed 13 inches; they should be moderately but efficiently drained, and filled with strong rich loam. Pot the plants when they are placed in the house, at the end of May or early in June. Water copiously, maintaining a moist atmosphere. The kinds we advise are Golden Gem and Little Heath, the former a whitish green, and the latter scarlet-fleshed. If you wish to grow Melons amongst plants in a greenhouse you will raise the plants in a hotbed, sowing the seed early in April, growing on and removing to the greenhouse at the close of May. The kind we advise for this purpose is the ridge kind, *Achepesnorrischer*, probably the new Melon Little Heath would also answer.

ALOCASIAS LOSING LEAVES (W. J.).—The Alocasias do in part lose their leaves. A. metallica does not, only losing its old leaves, but if kept cold and damp they rot off. A. macrorrhiza variegata loses them entirely, being dormant in winter. We presume your plant is A. metallica. In winter the temperature should be 60° at night, and 65° to 70° by day, with a rise of 10° or more from sun heat. In very cold weather 5° less at night will do no harm. The plant should be potted now in a compost of two parts fibrous but sandy brown peat turned up roughly, fibrous loam broken up roughly, one part leaf soil, half a part of old dry cow dung, and a quarter part each of charcoal in lumps from the size of a pea to that of a walnut, crocks broken up rather small, and silver sand, the whole well mixed and incorporated. A half part of cocoa-nut fibre refuse may be added advantageously in lieu of sphagnum moss, which some growers employ. Drain well, and pot with the plant well elevated, but just burying the roots in the compost. A deep pan is better than a pot. Water moderately for a time until the plant is growing freely, and then water copiously, sprinkling overhead twice daily; maintain a moist atmosphere, and afford slight shade from bright sun. Increase the temperature from now, gradually raising it by May to 65° or 70° at night, and 75° by day, with a rise from sun heat to 85° or 90°, admitting air moderately. After August the heat will be gradually lowered to the winter temperature by October. Keep the plants moderately moist in winter.

VINES STARTING (Idem).—The temperature you have given Vines is suitable, but to have had Grapes in May the temperature should have been somewhat more speedily increased. However, as they have broken weakly it is all the better for them. We should now keep the temperature up to between 60° and 65° at night, and 70° to 75° by day, with a rise of 10° by sun heat, admitting at the same time plenty of air. In very cold weather 5° less than the night and day temperatures will be better than those mentioned. You will be little behind; take advantage of bright mild weather, but proceed cautiously when it is dull and cold.

PLANTS FOR FLOWERING IN AUGUST (M. A. H. E. L.).—*Valletta purpurea*, to flower in August, should now be placed in a vinery or other house where it will be started into growth. It should be continued there until June, when it may be placed in a greenhouse near the glass. It will flower at the time you wish. *Amaryllis marginata* conspicua you must keep at rest until the middle of June, then start in a gentle hotbed. *Lilium auratum* pot now if not already done, and place it in a cold pit, keeping only safe from frost; keep it as cool as possible, exposing it fully after the middle of May, and if likely to be too forward retard it by placing it under a north wall. *Eucharis amazonica* pot now, place it in a bottom heat of 70° to 75°, encourage it with a brisk heat and moist atmosphere, and continue this treatment up to the end of May, then withdraw the plant from the hotbed placing it in a light, airy position, giving water only to keep the leaves fresh, and six weeks before you wish it to bloom place it in bottom heat again and it will probably go to flower. *Crassula coccinea* you will need to retard as it will flower long before that time, therefore keep it in a cold pit safe from frost up to June, and then place it on the north side of a wall or other fence, removing it to a cold pit some time before you wish it to flower. Considerable judgment is needful to have plants in flower at a given time, as they sometimes need to be forwarded or retarded.

RIBBON BORDER (W. G. S.).—We think five rows would suit better than nine, and, provided the scarlet Geraniums are rather strong-growing, we would, beginning at the back, have scarlet Geranium, *Portilla* nipped, yellow *Calceolaria*, blue *Lobelia*, *Cerastium tomentosum*. The *Perilla* may be sown in March in heat, picked-off, and hardened-off, *Cerastiums* do best divided.

GREENHOUSE CHANGED TO A CUCUMBER HOUSE (February).—By the plan proposed you will succeed very well, more especially as you have the flue to place over your pipes. But for that, after encasing the pipes with the brick

well, we would have filled the space round and over the pipes with stones, chinkers, or brickbats, finishing with a layer of clean-washed gravel on which to lay the soil. By the upright drain pipes you speak of going into the rubble, you could dispense with evaporating-pans beneath your bed, and yet have plenty of moisture. The plan of training the Cucumbers is also good, and the stems should be brought up not less than 15 inches from the glass, and 15 inches apart; but frequently when we do this, and not to lose time, and yet make as much as possible of the space, besides these main plants we have other plants in 7-inch pots near the back, from which we cut fruit first, and remove them as the others fill the space.

DOUBLE GLAZING (T. C. S.).—We would put the glass of your double-roofed house some few inches apart. The outside sashes should be moveable, so that the inner glass may be cleaned when necessary. Then we have no fear as to the obstruction of light. We are not prepared to enter into minute details, but we think it would make a difference of from 4° to 10°; whilst the house would be warmer in winter, it would be a little cooler in summer.

THROTTLE VALVES (Alpha).—What are called throttle valves are generally effective, but even with them, if the water is hot in the pipes, and you only want a little heat in another place, you must move the valve just a little. The sixteenth of an inch may enable you to do all you want, and if that be too much, give less, or shut it off for a time. We have some connections with 1-inch pipes, and a strong brass tap to turn, but frequently we find that not turning the tap, but just moving it a little, gives us all the heat we want.

HOT-WATER PIPING (Bob. S.).—To keep up the heat you want, you will need four pipes instead of three, and in the greenhouse part you had better have 4 instead of 3-inch pipes.

HEATING BY A STOVE (Old Indian).—We do not think you will incur any danger by having your heating apparatus inside of the stove, as at A, provided you prevent all smoke and secure enough of moisture. We should carry the wire outside the buttresses if they do not project beyond the wall more than 3 or 4 inches.

FLUE-HEATING (Thos. Nicol).—We have not the least doubt that your proposed plan will answer, and that you will have plenty of heat. See what is said to-day to another correspondent about whitening the sides of the wall that bounds such a trench as your flue is placed in.

HEATING BY LAMPS (Abel).—We do not know the lamp you refer to, but we have seen paraffin lamps do well in small places. A little more care should be taken that the gases from the combustion may be carried out of the house. We should say two good paraffin lamps would be required for your house, 12 feet by 10 feet. We cannot give you a rule as to the point of safety when the lamps may go out. If you had a temperature of 45° the lamps might go out at bed-time in a mild night, but in a cold frosty night they should burn all night. There is something nice in heating with lamps, but in practice we would confine their use to small places. Even in such a place as yours, we believe a small iron stove, with a flat top for an evaporating basin, would be better and cheaper. Like the lamps, that need not be seen from the middle of March to November. We have no doubt that Barr and Sugden's propagating case will answer its purpose. Lately we gave an account of a simple box that could be placed in a window or a greenhouse, and bottom heat given by pouring in hot water in a box beneath the bed for cuttings.

TREE ONION (Idem).—This is much liked by some for pickling. It is the *Allium proliferum*. The little offsets may be planted in autumn or spring, though old bulbs make the strongest plants. Those planted in September and October will be fit to gather in June and July; those planted in spring will come in a month or two later. They may be planted in rows a foot apart, and 2 or 3 inches deep. Some people think they are super-excellent, others care nothing for them. The bulbs that form on the stem must be dried in a shady place.

PIPES UNDER PATHWAYS AND BORDERS (Inquirer).—We think you should not have above 55° to 60° of heat in the narrow border for timbers. We do not think you will gain much by bricking the bottom of this trench in which the pipes are placed, but it might just tell a little were you to floor it with tiles and keep these tiles white in winter. Slates whitened would answer just as well. In the next place, your chief reliance must be to make the bricks on the side of the chamber non-conductive by well limewashing them every autumn. They will then throw the heat into the house, instead of absorbing it and carrying it into the soil. Fourthly, we believe this simple plan will answer best, but if even this should not answer, though we are next to absolutely sure it will do so—then we would put down a thin slate 1½ inch from the back wall next the soil, leaving that width of cavity, and then with mortar or cement and chips make it air-tight at the top. Of course, you understand this cavity is to be between the bricks and the soil. Try first the lime or whitewash on the bricks in the trench in which the pipes are placed, and let us know the result. We believe you will need nothing else, and will save much fuel besides. The bricks will then reflect instead of absorb heat. That we have proved over and over again.

SELECT GERANIUMS FOR POT CULTURE (H. Frome).—Jean Sisley, Rose Rendatler, Virgo Marie, Madame Mazarin, Clipper, and Gloire de Corbeny.

GLAZING.—In reply to "H. G., Oldham," I do not know of any plan for putting glass in grooves at the ends of plant houses, same as the design in January 4th, 1872, except to nail ribs on the glass after putting them into their position. If the same plan of horizontal grooves as at the side is continued, it necessitates two or three tiers one above the other at the end, which would practically be inconvenient. I have tried nailing or screwing ribs on after, and it answers fairly well so long as the ribs are not too light. A projection must be made in the sashbar the thickness of the glass. I am more than ever an advocate for little or no putty.—C. P. F.

PRUNING PYRAMID APPLE TREES (G. Stevens).—The trees should not have been cut-in quite so closely last season; close cutting-in in winter invariably produces an abundance of unfruitful young shoots. Were you to prune-in closely again you would aggravate the evil you wish to avoid. Prune the trees at once into the pyramid form. On some of them the young wood will be more thickly placed than it is on others; the shoots nearest the base of these should be cut back to two-thirds of their length, gradually cutting-in closer as you near the apex of the tree so as to insure the pyramid form. The trees that have fewer branches should be cut-in rather more closely. We also advise you to practise summer pruning, which is the best method of inducing fruitfulness.

PAINTING FRUIT WALLS TO PREVENT INSECTS (A Regular Subscriber).—We have not seen paraffin used for this purpose, but we think it would have some effect. We advise you to try it on a portion of the wall first, and watch the result, comparing it with the portion that was not done in the same manner.

THINNING PEACH-TREE BLOSSOMS (Bloomer).—Allowing all the blossoms to open will not have any injurious effect on the trees. We thin the fruit as soon as it is fairly set, but we make two more thinnings afterwards; the last thinning should take place at the commencement of stoning. Allowing too many fruits to ripen on the trees exhausts them.

PRUNING FRUIT TREES (W. W. G.).—We prefer to have all our fruit trees pruned before Christmas, excepting Peach trees, which may be pruned in March. The other trees you name should be pruned at once, leaving the Peaches to the last.

GROS COLMAN GRAPE FOR FORCING (J. A. W.).—This is an excellent late-keeping grape, and like all of that class it is not desirable to force it. We have, however, seen examples of it coloured jet black early in July. There is no Black Grape at all equal to Black Hamburg for early forcing. Should you still desire a plant of Gros Colman, it ought to have the warmest end of the house.

STARTING VINE (Kittie).—There would be no gain by starting your Vines artificially in a house not intended to be heated subsequently.

NAMES OF PLANTS (I. W. C.).—We cannot name plants from their leaves only. (*J. F. S.*)—*Pittosporum Tobira*, an evergreen shrub. It is propagated by cuttings of the shoots in sand, under a bell-glass, in April, and kept in a close frame, without bottom-heat; sandy, fibry loam and a few nodules of fibry peat. Winter temperature, 35° to 45°; summer, 60° to 75°. It has delightfully-scented flowers, and has stood against walls, in the climate of London, with a little protection. (*G. O.*)—*Clanthus Dampieri* and *Adiantum tenerum*. (*J. Profit and others*).—We have repeatedly stated we cannot name plants from leaves only. (*Young Gardener*).—*Acacia (Albizia) lophantha*. (*F. W. H.*).—1, *Thyracanthus Schomburgkianus*; 2, *Indeterminate*. (*J. E.*)—1, *Dicksonia anthesisifolia* (Mauritius); 2, Probably a *Nephrodium*, but immature. (*A. E. A.*)—Named *Fera* correct. Unnamed one perhaps *Lomaria discolor*, but too young. (*Jas. Luck*).—*Pteris longifolia* and *Davallia (toxicaspe)* gibberosa.

POULTRY, BEE, AND PIGEON CHRONICLE.

TO ALL TO WHOM THESE PRESENTS SHALL COME, AN EXHIBITION COCHIN SENDS GREETING.

I'm not going to give a history of my life, which began in one of the midland counties of England in the year 1871, but will just state, that I became the property of my present owner, after passing through two or three other hands, before the close of that year. My master is a very humane and generous man (that is as far as my wife and myself are concerned), although when he purchased us I thought him very stingy, as I heard him say to my former owner, What a large sum of money ten guineas to give for two fowls! We were brought by him to a small town in the south, and well cared for. I might write a great deal about the care, &c., but that is not the object of my writing, so I will at once enter on the subject of my, or, as I may say, of our grievance.

I remember our master one day saying, as he looked admiringly on us, "They're two very beautiful birds, I'll send them to ——— exhibition and see if they'll (meaning the judges of course) give them a prize." So, soon after, we had a great change in our fare and care, for all the delicacies that could be found or bought were obtained for us, and to use a common phrase we lived like fighting cocks, and a great improvement was made in my wife and myself. After a few days of this superior living, and the night before we were sent off to the show, we had such a washing of face, comb, wattles, feet, boots, &c., and such brushing and smoothing of plumage as we never experienced before, and then we were placed on some of the very cleanest straw so that we might not be soiled in getting dry. As soon as we were alone I said to my wife, "Now, old dame, if we are to win a prize at this show we must put on our very best appearance and complete what our master has begun, and plume ourselves as beautifully as we possibly can." Well, we set to work at once, kept on for most of the night, and I'm sure when I looked at my wife in the morning I thought she never looked half so lovely before, and I could not help giving just two or three turns round with my wing on my heel in admiration of her. I felt very proud of myself too, thought I looked quite grand, and was sure that if there should be a cup in competition we must win it. Well, the next thing for us was to be put in a capital hamper lined with cloth, and straw at the bottom as cosy and comfortable as possible, and then delivered to the carter of the railway company for transmission, as labelled "Live birds, with care. Mr. ——— Hon. Sec. ——— Exhibition." I remembered hearing my master say to the rough fellow that took hold of our basket as though it contained nothing of value, and swung it round so suddenly that we were both thrown down, "Mind what you're about, there's two very valuable fowls in that basket." "Oh I'll take care on 'em, sir," said he as with another swing that sent me back on my tail, he flung us in his waggon and soon drove us off for the station. As we were rattled along I tried to stand up and just take a look at myself, and oh, my poor tail and wings and all my plumage were in dreadful disorder. My wife was so fat and heavy that she could not stand up, but I could see she was suffering severely from the cruel shaking of the careless carter. We stopped two or three times on the road to receive additions to our load, and among other things several baskets of poultry for the same exhibition as ourselves.

And now the station is reached and we are bundled down from the waggon on to the platform, hurried along to the weighing machine, and thrown on it with all possible violence. "—lbs. weight, paid through to— Exhibition," and again with a violent jerk enough to smash all our bones we are thrown on the platform, and finally flung with great force into a dark luggage van which is being piled up with similar baskets. I hear one or two cocks crowing away heartily, one a Game; he seems not to have had such rough treatment as we were subjected to, or else he can bear the knocking-about better. The other seems to be a Hamburgh by his shrill crow, and the strut and chat that he makes. However, they soon become silent, for the heat is stifling. We were placed at bottom, being heavy, yet the top birds must have suffered fearfully; but I hear the whistle, and find we are to stop at some station. Our door is opened, a nice fresh breeze comes in and quite revives us, more hampers are now piled on, the van quite filled up. I hear the kind guard give orders to open the ventilator to give the fowls a little air, but the surly fellow says with an oath there's plenty of air for them things, and so we are left in the dark and suffocating van, while two or three stations are passed; we find it difficult to breathe, our throats distended, our bodies all in sweat—it seems a matter of life or death for us.

The whistle sounds again, and again the train stops, and this time the door of our dungeon is opened, and we are all as quickly and as roughly as possible thrown out on the platform to wait for the train that is to take us to our destination; here for twenty minutes we are kept exposed to a horrid north-east wind that rushes through the station and threatens to blow us away, baskets and all together. Our position was pretty good, there were several baskets to windward of us, and one (I think it contained the Hamburghs, although the crow and chuckle were both gone) on the top, so I said to my wife, "Our place is bad enough, but the poor fellows outside must suffer most awfully after the heat of the prison van in which we were brought," but she poor thing was quite down in her luck and had nothing to say, and truly we were in a sorry plight, totally different from our prim appearance in the morning, all the brushing and touching and pluming disarranged, and many feathers broken; the cold wind made us shiver, and we were (to use a slang phrase) quite used up. But the train arrives on the other side of the station, and we are all pitched from one porter to another across the line; we were all terribly shaken and bruised, but the poor Hamburghs suffered most, for one fellow missed his catch of them, and down they went rolling end over end. I'm sure I wonder they were not killed outright. We have a little better van in this train, there are two windows, and the guard opens one for air. We all feel grateful to him for it, and my Game friend actually crows out his thanks. I try to shout out my cock-a-leary-do, but failed; I'm so shaken and bruised that I really can't.

Away we go again, and station after station, some five or six, are passed, and at the next we are again removed, I must say with much more care (and the reason is they say it is a small line and the servants are better looked after). I'm beginning to hope our troubles are over, there is much less shaking and no pitching. We are placed on a trolly and taken round to a large waggon in waiting, kindly sent for our special use by the secretary of the show, and piled on it until I get afraid that some accident of a fearful character will happen. We are soon moved away from the station, and along a rough street; the baskets creak, the wind howls, and it seems sometimes as though we should topple over, and we should but for the ropes by which we are bound.

However, we reach the show-room in safety, and soon are placed in the pens to await the decision of the judges. We have plenty of light here, and I and my old lady set to work to repair the damage to our plumage on the journey; she straightened out the feathers of my tail and helped me to adjust the whole of my plumage, and I did the same for her, so that we greatly improved our appearance. In the morning the judges come round and take at first a cursory glance at each pen, and I could see that we were favourably considered. Again and again they come, not able to determine our merits as compared with some other pen. At last a man with hammer and nails comes and fixes a card on the top ledge of our pen. "I knew it would be so" said he, "they are the best pen in the show." First and cup is heard from each person on passing after. My wife looks up highly pleased to be sure, and as to myself I declare I spread out as large as I possibly could, and looked as grand as my Lord Mayor on the banquet day. I felt very proud too, I assure you, to be so successful on my first exhibit. Our poor friends the Hamburghs were put in pen No. 637, exactly opposite ours, and he poor fellow looked queer indeed, his beautiful tail on which he prided himself was all a smash, and all his fine feathering wretchedly bedragled, not even commended. "All the fault o' them railway chaps" said our friend of the hammer and nails, "they be good birds, but smashed to pieces by the rough handling on the journey." "Right you are," said I.

But our troubles are not yet over, for although we do not

object to a real fancier turning us round to inspect the qualification we are supposed to have, we do feel hurt and annoyed at every booby and donkey stirring us round with his walking stick without any object but mischievous interference with what he knows nothing about. Well, we had plenty of poking the first day, my poor hocks and sides were made quite sore, but the second day was dreadful indeed. I was grateful to hear our friend of the hammer and nails often calling out, "Now keep out that stick, I'm sure the birds don't want you stirring 'em up so," and two or three times he saved us from some severe poking. My wife was so gratified by the care he took of us, that she said she would lay him an egg for breakfast, and she duly deposited one in the corner of our pen, nor did she stop shouting until he came and took it away. I intended, being a representative bird, to have called a meeting of all the birds, but that being impracticable I communicated my wish to each, and have got them each and every one to enter a solemn protest, first against the railway officials for the careless and reckless manner with which they treat us in transit, and secondly, against the public for the like treatment of us when in the show pen.—C. CHINA.

HANLEY POULTRY SHOW.

PERMIT me to explain away a misapprehension that appears in last week's Journal. On January the 9th last, I received a letter from the Secretary of the Hanley Show requesting me to act as one of the Judges of poultry. I was, however, compelled to decline this invitation, as unfortunately I have been in more than a score similar cases since my accident. On January the 21st, I again heard from the Secretary, stating, "The Committee were extremely sorry at not being able to secure my services this year, but trusted they should be more fortunate another season." These two letters are the only communications of any kind I have had from Hanley, consequently I did not "receive notice three days before the Show that my services would not be required." I will simply add, I am not cognisant of any correspondence with Mr. Teebay, nor am I aware who were the Judges eventually appointed for the Hanley Show.—EDWARD HEWITT.

A CORRESPONDENT informed you that Messrs. Hewitt and Teebay were engaged as Judges, and were written to a few days before the Show saying their services were not required. I have asked Mr. Hewitt to kindly reply for himself; and on our behalf, with respect to the engaging of Mr. Teebay, I wrote to him asking his terms, and this Committee, thinking they could not entertain them, there was no more said nor done in the matter, not thinking Mr. Teebay would consider it an engagement, he not being formally engaged. I was informed a few days before our Show that Mr. Teebay had told several exhibitors he was coming to Hanley as Judge, I immediately wrote to him and told him what had been told to me, and reminding him that no engagement had been entered into with him.

Then it was stated that several hampers of poultry were left unpacked during the Exhibition: allow me to tell you that three hampers of poultry were sent here by the railway company in mistake; they belonged to Mr. Gilliver, he having left them at the parcel office, as he was going to call for them on his way home from Hanley. Some of the servants, not knowing this, sent them to us, and they only remained in their hampers during the judging; and then myself and Mr. Fielding, of Trentham, put them in some spare pens and fed them. Mr. Gilliver having gone away, and expecting him to return, they remained in our charge until the close of the Exhibition, and were then forwarded to their proper destination by Mr. S. Fielding, of Trentham; and the owner of the birds, Mr. Gilliver, will write to you and tell you so.

The names of the Judges having been omitted was entirely an error of the printer, which I had not noticed through pressure of other business connected with the Show.—P. COOPER, *Hon. Secretary*.

At the last Hanley Show Messrs. Douglas and Martin were Judges for poultry, Mr. Ridpath for Pigeons, and Mr. Rayson for Rabbits. The Show was a decided success in every sense, and I am sure there was not a pen of birds in the Show that were not unpacked when the judging commenced.—T. RIDPETH.

COLCHESTER AND BRADFORD PIGEON SHOWS.

IN reading the report of the Colchester Show I find your correspondent alludes to cups for points for Pigeons, and says, in lieu of increasing the attraction such a cup appears to frighten all small exhibitors, &c., and says the result "proves" a very strong prejudice exists against them. He goes on further to say that committees would do better without them, or words to that effect, and that only nineteen exhibitors competed for the forty prizes; but he does not state the amount the Colchester Committee held out as a tempting bait to induce Pigeon exhibitors to send there, and my only wonder is that so many as nineteen

Pigeon exhibitors could be found to compete for such paltry prizes as were offered at Colchester.

I then read the report of the next Show, which is "Bradford," and I compared both schedules and catalogues, and what do I find is the result? I see that Colchester offers the magnificent sum of 15s. as a first prize, and that there are two cups to compete for. But what do I see on the Bradford schedule? First, a cup, value ten guineas, for the winner of the greatest number of points; second, a cup, value five guineas, for the winner of the second greatest number of points; and then follows a list of fourteen more three-guinea cups—almost a cup to each class in the Show, besides a first prize of 20s. Well, what was the difference of the two Shows? Why, Bradford, by offering these point cups, besides a liberal amount of money prizes, had 112 exhibitors and 634 entries. Did these cups frighten the small exhibitors? Not a bit of it, for I see that among the large exhibitors, of which ten exhibited ten pens and above, numbered 349, and the small exhibitors 102, whose entries were under ten pens numbered 285, which is rather less than three each.

Thus it is proved by this show that it cannot be the point cups that frighten the exhibitor of one or two pens of birds. I also see that one of these small exhibitors, who, as your correspondent says, are the sinews and backbone of a show, only exhibited one pen, and obtained a three-guinea cup for it; another with two entries won another three-guinea cup; and a third with three entries another; so I really cannot see how anyone can be so prejudiced as to lay the blame on the point cups. I maintain if committees who do not want to make a fortune out of their shows, and want to get up a show of really good birds (as was the case at Bradford), they must offer a liberal amount of both money and cups to induce the sinews and backbones to send their birds to compete along with the professional exhibitors or point-cup winners.—J. FORD.

BRADFORD PIGEON SHOW.

THIS Show was held on February 25th and 26th, in the large room and corridor of St. George's Hall, and must be pronounced a great success; in fact, we may say it was the best exhibition of Pigeons we have seen since the Aston Summer Show. There were twenty-four classes of single birds, which produced 604 entries; and a Selling class for pairs of birds, with thirty entries. The Committee are to be congratulated for their liberal list, in addition to which, when they found their entries so numerous, they gave an additional five-guinea cup to the exhibitor obtaining the second highest number of points in the Show.

Carrier cocks were represented by fourteen specimens. The first prize and cup were taken by a Black; second and third Dun and Black respectively. In the opinion of many fanciers the second-prize bird was the best in the class. Of *Carrier* hens were fourteen fair specimens; still they were not so good as a lot as the cocks, and strange too Duns winning all three prizes. In this class certainly the best bird won. *Pouters* had two classes assigned to them, and were represented by forty-one pens of all known colours. We never remember to have seen so good a lot before for only two classes. The prize birds were Red, Blue, and White. In the hen class the first was a very nice Red; second a good Blue; third a good Yellow. *Almond Tumblers* were represented by eighteen good specimens. The first was a grand bird, which won the cup for the best bird in Classes 5, 6, 9, and afterwards obtained the £5 5s., in lieu of that which had previously taken for the best bird in the Show. The second bird was very little inferior to the former. Any other variety of Short-faces had twenty-six entries. First and second were a Red Agate and Black Mottle respectively. The third, a bird of the best carriage (Red whole-feather) we have seen for some time. *Long-faced Tumblers* (Almond or Mottles).—First was a Red Rosewing, a good bird too; second a grand Black Mottle; third a Black Mottle also. Any other variety of *Toy-faced Tumblers*.—A Blue Bald-head obtained first and cup for the best bird in this and the preceding class; second a Yellow Bald; third a Black Beard. These two classes mustered seventy entries. *Foreign Owls* consisted of thirteen pens, all good birds. First a Blue; second and third a White and Black respectively. *Barbs* were the best class we have seen of this variety for a long time. First a good Red; second and third a good Black and Dun respectively. *Trumpeters*, new type, had ten pens; the hood and rose of all them were grand, in fact we may say the only difference in the lot were their markings. First and cup for the best bird in this and the previous class was a Black Mottle; second a good Black; and third a good Black. *Trumpeters*, old type, had eighteen entries, and a good class they were; the difference in the two classes was notable in the extreme. First a Black Mottle; second a Red; third a Black. *Jacobins*, as a lot, were grand, several old fanciers remarking that the competition in this variety is getting so severe that many good birds have to be left out in the cold. First and second a Yellow and Red; third a Red. *Fantails* were not so good as they might have been. First a Blue; second and third large-tailed Whites, rather deficient in carriage. *Turbits* were

represented by twenty-seven pens of all colours. First a Yellow; second a Silver; third a Red. *English Owls* had thirty-six pens of all colours. First and cup a Blue, and cup for the best bird in this and the *Turbit* class; second a good Silver; third a Blue. *Dragoons* were divided in two classes—Blue or Silver, and Any other colour. All the winners in this class were Blues. Any other colour was first with a good White; second and third Red and Yellow respectively. *Short-faced Antwerps* had two classes assigned to them—cock and hen, also a cup for the best bird in the two classes, which was won by the bird whose portrait appeared in our Journal some time ago; second and third were Red Chequers. *Short-faced hen*.—First was the best Red Chequer hen living; second a Dun; third, with the best Blue hen we have seen for some time. These two classes had sixty-two entries. *Working Antwerps*, or *Messenger Pigeons*, had, like their *Short-faced* brethren, two classes assigned to them; also a cup. These two classes had seventy-two entries. Perhaps some of our readers will inform us how a judge can tell whether a *Working Antwerp* can fly his one hundred miles in a show pen. Any other variety had a three-guinea cup assigned to them, which was won by a Yellow Nun; second a Brunette; third an imported bird. This was a strong and good class; doubtless the best bird in the class was shown by Mr. Yardley, and received a very high commendation. *Selling Class*, single birds; Dun Carrier cock was first; second a Blue Pouter; third, a nice Almond. *Selling Class*, pair; first and cup for the best pair in the two *Selling* classes was a pair of Red Jacks; second, a pair of White Foreign Owls; third, Black Carriers. These two classes had fifty-nine entries.

In conclusion, we will say the Committee did all that lay in their power for the comfort of the birds; these were well fed and watered, and considering the weather, which was very severe, we never saw a lot look so well. Mr. Allsop judged Classes 5, 6, 9, 10, 11, 12, 13, 14, 24; Mr. Cannon 3, 4, 7, 8, 15, 23; Mr. Smith 1, 2, 16, 17, 18; Mr. Crossland 19, 20, 21, 22.

The following are the awards of cups:—*Carrier* cocks and *Carrier* hens.—G. J. Taylor, 13, Fitzwilliam Street, Huddersfield (cock). *Pouter* cocks and *Pouter* hens.—G. J. Taylor (cock). *Almond Tumblers*, Any other *Short-faces*, and *Foreign Owls*.—R. Fulton (Almond). *Long-faced Tumblers*, *Mottles* or *Almonds*, and Any other *Long-faced Tumblers*.—J. Watts, Hazlewell Hall, King's Heath (Bald). *Barbs* and *Trumpeters*, new type.—R. Fulton (Trumpeter). *Trumpeters* (old type), *Jacobins*, and *Fantails*.—R. Fulton (Jacobin). *Turbits* and *English Owls*.—R. Clay, Audenshaw. *Dragoons*, Blue or Silver, and Any other colour.—W. H. Mitchell, Bank House, Moseley (Blue). *Short-faced Antwerp* cocks, and *Short-faced Antwerp* hens.—W. Gamon, Hoole Cottage, Chester (cock). *Working Antwerp* cocks, and *Working Antwerp* hens.—D. Riddihough, jun., Bradford (cock). Any other variety.—W. Harvey (Yellow Nun). *Selling* class, single, and *Selling* class, pairs.—W. Harvey (pair of *Jacobins*). Ten-guinea cup for the greatest number of points.—R. Fulton. Five-guinea cup for the second greatest number of points.—G. J. Taylor. Two-guinea cup for the greatest number of points in the *Long-faced Tumbler* and *Antwerp* classes.—D. Riddihough, jun.

THE KING OF OUDE'S FLYING PIGEONS.

IT will be known to most of your readers that after the Indian mutiny of 1857 the King of Oude was removed by the Government to Calcutta, where he still remains as a state prisoner. In olden times, and till lately, Garden Reach was one of the most pleasant suburbs of Calcutta. There the rich merchants and civilians had their residences on the banks of the river, and many a stately house and well-laid-out compound met the eye of the new arrival as he sailed for the first time up the Hooghly. The character of the place is now greatly changed, and it is sometimes called Little Oude from the King of Oude having bought up a great part of it. He is allowed a liberal pension, which he spends on a well-kept menagerie and a host of human parasites from his former dominions. He has bought from time to time a great many of the best houses contiguous to where he was first settled down, which was in the southern part of Garden Reach; and as he buys one he adds it to his former property by enclosing it with a high wall. The houses there are not built closely together, but each stands in its own grounds of from one to twenty acres. In this way he has acquired half of Garden Reach, and what he owns is kept strictly private, none but his own people being allowed within his walls. Having little else to do besides attending to his menagerie and Pigeons, all the Mussulman festivals are kept with the greatest regularity, and the fearful noise created by tom-toms and all manner of noisy instruments at these times, which recur with alarming frequency, has had the effect of depreciating the value of the remaining part of Garden Reach, so that people do not now prefer it as a residence. Houses are at a discount, many of the best are untenanted, and not a few falling to ruins.

It was in January, 1865, that I first arrived in Calcutta by the P. and O. Co.'s Steamer "Simla." As we passed Budge Budge

and turned the bend of the river, which brought us in sight of Garden Reach, it was near sunset. By-and-by we were abreast of the King of Oude's houses, fancifully coloured blue, yellow, and red. The Calcutta houses are built of brick and covered with plaster, which is repaired about every third year and white-washed, and the King has a fancy for tinting the whitewash with gay colours, leaving the mouldings of the doors and windows either white or a different shade of colour. I observed a great many boxes on poles scattered about the grounds for the accommodation of a host of monkeys. On inquiry I was disappointed to learn that no European was ever admitted within the walls to see the large collection of birds and beasts; but some years afterwards, in the cold weather of 1868-69, I noticed an advertisement in the newspapers, saying that His Majesty would throw open his grounds on a certain day to all Europeans whose names were on the Government House list, so I lost no time in applying to Moonshee Ameer Ali, the Grand Vizier, for a ticket, and in due course I availed myself of it.

On arriving at the principal gateway I was received by a number of gaudily dressed officials, who greeted me with courtesy; and on entering I was surprised to see the care and taste displayed in the laying-out of the grounds, and the many beautiful and rare animals and birds located in them. It is said that the King has spent upwards of a quarter of a million sterling on his menagerie, and I knew a dealer in Calcutta who assured me that he sometimes made sales to him amounting to 30,000 rupees at a time. From the bargained-for amount, however, about half has generally to be returned to understrappers, no business being done without their interference. It is impossible to approach a great man direct in eastern climes; the underlings would soon put a stop to such a proceeding unless sweating dust-tooree was handed over to them. This will give your readers an idea how good a thing His Majesty's taste for live stock has been for his officials.

As my object is to give an account of His Majesty's flying Pigeons, I shall be very brief in dealing with the rest of what I saw. In one part of the grounds is a small mosque-shaped building surmounted by a gilded dome, the apartments of which are floored with marble in inlaid designs, and hung round with pretty cages containing beautifully coloured birds. What struck me most was the cleanliness they were kept in; and this applies to all the birds and beasts about the place. Of course they might have had extra attention on such a show-day, but, from the healthy-looking appearance of them all, I think they are well attended to. In the centre room of the building the floor was hollowed-out to contain water, in which were a number of small gold, silver, and other fish, all so tame as to eat from the hand. I was told that the King takes great delight in feeding them, and does so almost every day. In front of the building is an oblong marble tank, measuring, as far as I can remember, about 40 by 100 feet, and containing a great assortment of aquatic birds, many of them of great rarity and brought from great distances. Not far from the tank is a place devoted to the larger feline animals—a lion, tigers, leopards (spotted and black), hyenas, &c. I noticed three jackals, one of the usual colour, a second pure white with red eyes, and a third a melanoid jet black. For any freak of nature of this kind the King will pay a good price. A cat-fancier would have been delighted with the assortment of Persian and Afghan cats. The usual colour of those brought down by the Cabul fruit-sellers, every cold weather, is pure white, but I saw pure black and tortoiseshell ones of great size and length of hair. Among the Parrots, of which there is a splendid collection, especially of Australian, Bornean, and Sumatran kinds, I saw two albinos of the common ring-necked Bengal Parrot. They were of the most lovely canary yellow with red eyes.

I must now come to the Pigeons. His Majesty's fancy Pigeons are kept in some of his best houses, the lofty verandahs of which are enclosed by wire netting. They were not on view, so I cannot describe them. He has recently acquired a good many European varieties, and his taste for them lies chiefly in Runts and Jacobins, both kinds being entirely different from anything to be found in India. He had some very fair Jacobins, which were shown in cages on tables laid along some of the garden walks. They came from France; and besides having birds of the colours and markings known here, I saw very good Blue and Black self-coloured ones, Baldpated ones with feathered legs, and one pair of Reds with both feathered legs and a Trumpeter's moustache or rose above the beak. This pair was very good in hood and chain. I must now come to the flyers, of which, I daresay, the King has four of the largest trained flocks in the world. Each flock contains about a thousand birds, and is kept in a separate house, and at a distance of 200 or 300 yards from each other. I have no doubt these birds, which I shall endeavour to describe, have been bred for generations for flying. The first thing which strikes a fancier about them is the wonderful hardness and close-lying appearance of their feathers, and the bold upstanding look of the birds. In this respect there is a great deal of the character of the highly-bred Carrier about them; but they differ in the head and beak, which is some-

thing like that of an Archangel, being long and thin. And with reference to the Archangel, as I have seen it stated somewhere that it originated in Germany, where it is called the Bullfinch, I may correct this opinion by saying that it is well known in India, having been bred there for generations, and I believe many more of the German Toys originated in the same country, where a great many wonderfully feathered birds are bred.

But to return to the flyer. In colour it is invariably pied, and almost always the head and neck as far down as a Nun are coloured, the other pieces of colour being disposed without regularity over the body. The colour is never in mottles but in splashes, and the eye is orange. Of these birds the King has, as I said, four great flights, one each of Blue, Black, Red, and Yellow Pies. For beauty of colour—a deep metallic shining black, clear blue, rich mahogany red, and bright yellow—they are worth going far to see. Attached to each flight there is a keeper, whose duty it is to feed and fly them; and for the latter purpose he keeps beside him a jar of some small seeds, of which the birds are extremely fond, and a long bamboo with a small red flag attached to it. Throwing a small quantity of the seed on the ground, and at the same time uttering a peculiar call, the keeper of the flight I watched brought his birds out of the house in a heap, and in a few seconds the seed was gone, when he began to drive them on a large wooden rack, shaped like a greenhouse rack for flower-pots standing on, which stood near the house. They evidently understood him, for in a short time they all rose from the ground and settled on the rack, which, though by no means small, was so crowded with birds that there seemed no room for one more. All of a sudden, placing his first and second fingers in his mouth, the keeper gave a shrill whistle, and at the same time waving his flag, the great flight rose in the air. They neither flew very high nor very far away, but they kept together in a compact mass with scarcely a straggler, so that each time they passed over the house they cast a great shadow on the ground, and the noise of their many wings was like music to my Pigeon-fancier's ears. At the time I saw them flying the other three flocks were going through the same performance to the amusement, I daresay, of some of the other visitors, and more than once the flock I was watching mingled with another in their flight and separated again. They were evidently lazy, being well fed and ready to come down when wanted; but the keeper had them well under command, and by the motions of his flag kept them going as long as he liked. At length I asked him to bring them down, which he did by lowering his flag and throwing a small quantity of the small seed on the ground, uttering his peculiar call as he did so. They seemed to stop instantaneously in their flight, and with a rush "like Doves to their windows," the whole mass settled at my feet, moving the air with the fluttering of their many wings. As soon as they were on the ground I noticed the man dart at and catch up one, which he shook and tossed up. It was a Yellow which had got into the Blue flock as they mingled in their flight, and I daresay a young one not yet educated.—BALDPAPE, *Monifieth, Dundee*.

CANARIES AT THE CRYSTAL PALACE BIRD SHOW.

Why the usual critique on the judgment of the Canaries and Mules, forming the larger portion of the Bird Show at the Palace, has this year been omitted from the Journal I cannot understand, especially as the exhibition fully equalled any previously held as regards the quality and condition of the birds, and so far as the entire arrangements were concerned. That the Show was a large one may be ascertained from the fact of the catalogue containing the number of 1063 entries.

The first ten classes, confined to Norwich birds alone, were furnished with 290 specimens, giving an average of twenty-nine birds for each class. The Norwich birds, which were much admired for their gay plumage, formed the principal feature of the Exhibition, the Clear and Even-marked birds in many instances being rich in bloom and in beautiful condition. Classes 5 and 6, Ticked or Unevenly-marked Norwich, were well represented, many very showy birds being exhibited. In these two classes a couple of birds (Nos. 187 and 216), caused quite a sensation, owing to the very unnatural appearance they bore as regards their colour. On this account the Judges declined to entertain them as proper specimens for competition, which opinion was backed generally by fanciers from various parts of England after the Exhibition was opened to the public.

The four Belgian classes were represented by forty-six birds, nearly the whole of which were of high-class quality. There was a goodly array of London Fancies, the prizewinners in each of the two classes showing evidence of much time and trouble having been devoted to the bringing of them out. There were also several first-class Lizard birds, rich in quality, with faultless caps, and "kreeled" to perfection. The two classes of Cinnamon birds numbering sixty-four in the whole, occupied the attention of the Judges for some time in selecting seven of the number for prizes. A new feature in the Palace Show was the

Yorkshire breed of birds: suffice it to say there were several excellent specimens shown. In future years no doubt there will be more entered.

The Mules above all were worth seeing. The eight classes had in them 126 competitors, and some care had to be exercised in selecting the winning birds. The two Even-marked Mealy specimens were in splendid condition, and fully earned the remark attached to them as being "exceptionally good." The markings on the wings and eyes were all that could be desired, the entire body being clear, with the tail feathers all told. Amongst the Mules, not excepting the cross betwixt the Canary and Linnet, there were many champion birds.

The whole of the Canary and Mule classes contained 680 birds, the remainder of the classes being set apart for the British and foreign specimens, of which a report has already appeared in the Journal.

[Our reporter failed to send us notes on the Canaries, and the above has been sent to us.—Eds.]

BEE-DOMICILES, AND SYSTEMS OF MANAGEMENT.

THE correspondence upon this subject increases, and the controversy grows warmer, but as yet nothing practical has been suggested by which the on-lookers have been benefited, and I am beginning to think that we shall see the opening of the bee season of 1873 without being one whit wiser as to which is the best hive. That the hive itself, be it straw, wood, or a combination of both, with moveable combs or without, round, octagonal, or square, has a direct influence upon the nett result of honey to be obtained in one season, I for one do not believe. The size is of more importance than the shape, because in a good and abundant season a moderately large hive would yield more produce than one too small to admit the storing of all the honey the bees could collect if they had space sufficient for their want. What we want is a hive that can be managed upon the swarming or the non-swarming system as may be desired, one in which the space could be curtailed or added to, so that it could be altered to suit the requirements of any season—bad or good, and in which the bees are so completely under our control that a thorough examination of the contents of the hive can be made at any time when necessary (not whenever the curiosity of the amateur would tempt him to do so); in short, a hive that would admit of the best system of management. Good management with unsuitable hives would be almost as bad as suitable hives and bad management. The hive and the system must go hand-in-hand—the one dependant upon the other, and then there is a probability of the greatest results following.

The hive that to my mind nearest approaches to perfection is that described by Mr. Abbot in the columns of *The English Mechanic*, and which I presume he would have used had Mr. Pettigrew accepted his challenge. I must own to feeling greatly disappointed that Mr. Pettigrew has not accepted Mr. Abbot's challenge, because, from the exhaustive nature of the trial proposed, I had hoped that the result would have been very conclusive as to the merits of the moveable comb hive over any other form of hive in which the combs are fixed; and I am compelled to the opinion that the reasons given by Mr. Pettigrew for his refusal are not in accordance with his previously-expressed desire for a trial that should be beneficial in its results to the bee-keeping community generally. He appears greatly offended with Mr. Abbot for his strictures upon "the Pettigrew system," which he published in *The English Mechanic* some few months back, and allows his personal feelings to interfere with his desire for the public good. I have had the pleasure of reading his "Handy Book," and if my memory does not play me false, although he does not positively advocate the sulphur pit, still he defends its use, and I believe makes use of this observation:—"As well might we condemn the butcher who kills the sheep that we may obtain the mutton, as condemn the killing of the bees to secure the honey." He also, I believe, mentions a kettle of boiling water to give the *coup de grace*. He finds fault with the conditions proposed by Mr. Abbot, but does not avail himself of his consent to any reasonable variation. He objects to the interference with the hives by the owner, because, he says, "it is not a question of good management." I thought the "let-alone" system was a thing of the past, but it appears it still has an advocate in Mr. Pettigrew. Oh! Mr. Pettigrew, your withdrawal may be dignified, but your conduct is not the least bit plucky.

I had a good laugh over Mr. Lowe's fancied contest, and the championship of the tea-chest. John Chinaman came to the fore, and proved himself the best hive-maker after all. There is no doubt that such a result might follow, and the tea-chest might distance all competitors in a single trial from May to September; but many conditions might arise even during that short time, which on the "let-alone" system would totally extinguish John Chinaman's chance without a remedy being practicable, whilst the same circumstances could be successfully combated if they occurred in Mr. Abbot's bar-frame.

In the concluding portion of Mr. Lowe's letter he says, "Se-

cond, that in the same season and locality differences in honey results in different hives, as a rule, will be determined or accounted for, not by the difference of hive, but by a difference in the state and condition of its population." Surely, no better argument than this can be used in favour of a hive in which that condition and state can be so readily ascertained, and so promptly remedied, as in the bar-frame hive. Suppose, as most bee-keepers know to their cost is often the case, the queen dies, or ceases to be fertile, the hive, if closed against inspection, would gradually go to the bad. In a bar-frame hive, however, the introduction of a comb of young brood from another hive at once changes the aspect of affairs; hope springs up, queen cells are started, and soon, where all was desolation, activity prevails, the colony is again in possession of a ruler, and becomes flourishing and prolific. The present spring affords a strong proof of the advantage of being able to make a careful examination of the interior of the hive. The open winter has led to great consumption of stores and very early breeding, and I have already seen several instances where the hives were judged by weight in the middle of January, and appeared quite heavy enough to weather the coming time of trial. Had an internal examination been made, the weight would have been better understood, as it was caused chiefly by brood in all stages. Of food there must have been a short supply, for upon the departure of the frost which set in so soon after, the hives had perished of starvation, and presented a sorry sight. Had their true condition been known, a few pounds of food would have saved them. I had several bar-frame hives in the same state, and am happy to say that by prompt attention at the right time they are still alive and prosperous, and I owe their preservation to the knowledge that I obtained of their condition by an inspection of their contents in the first week of January.

In conclusion, I hope that we shall have more individual opinion and less personal controversy in the correspondence upon this subject, as it is only by the comparison of opinions and experience that we are likely to benefit. We have a champion in the field for the straw skep, the Stewarton hive, and the bar-frame. What particular form Mr. Lowe favours I do not gather, but from the way in which he handles his subject his opinion would be valuable, even if he took his stand on the tea-chest; and I hope he will favour us with his opinion as to which is the best hive, and, what is of equal importance, how it should be managed.—R. SYMINGTON.

THE BEST-HIVE QUESTION—UNITING SWARMS.

YOUR number of the Journal for February 27th contained a good deal that was both amusing and interesting to bee-keepers. Hot waxes the strife on the subject of the "best hive." It is the old story, "when doctors differ, &c.," only aggravated in this case, because the doctors do not merely differ but fight. However, the question is shelved *pro tem.*, as the combatants decline the encounter, and the hive controversy passes again into comparative obscurity. Mr. Lowe's valuable monograph on the subject, happily corroborative of my own opinion, puts the question in its true light. You might as well ask which is the best house for the genus *homo*, as inquire which is the best hive for bees. Neither question can be settled off-hand, and in spite of Mr. Pettigrew's undoubted reliance on the superlative merit of his beloved straw skep I feel sure it never will be settled at all. It all depends on the circumstances and wants of the families, whether human or apian that are to occupy the several tenements. So of the controversy we may say, *requiescat in pace*.

But your other correspondent "A. B." has given us a valuable addition to our practical experience in bee-management, in his report of the method he adopts for uniting swarms, and indeed families of bees in every case of need. Nothing can be simpler or more likely to succeed. I wish to draw particular attention to it, and hope that it will be largely adopted in the ensuing summer. The only case of difficulty will be where it is desired to preserve alive a particular queen—say one which has proved herself a fertile mother, or possibly an Italian queen of value; because obviously in every case where swarms, &c., are united in this way, the queens would probably fight out the battle between themselves, and in any case one of them must be sacrificed. I should like to know whether "A. B.'s" plan would answer in the further case of uniting one stock to another, without recourse to driving in the case of one of them. Has he ever tried such a union of stocks? I should be particularly glad to know that this has been tried successfully, because I have four or five weakish stocks I should much like to unite together at this present time. They have so far survived the winter in good health, but they will do nothing, save perhaps growing into strong stocks by the autumn. By the way, I may observe that I often find my weak hives of one year become the strong stocks of the next, owing to their not swarming as the others do, often to excess.—B. & W.

OUR LETTER BOX.

LIGHT BRAHMAS (St. Edmund).—You may safely purchase from any two of the five you name.

BOERS (C. A. J.).—We know of no other than Brent's "Canary and British Finches," which you can have by post from our office if you enclose 1s. 7d. in stamps with your address.

HAMBURGH EGGS (M. H.).—Wait until the sitting is concluded. We cannot give an opinion on surmises.

SPANISH FOWLS PARTLY FEATHERLESS (E. Dumville).—If the Spanish pullet is quite bare, it is in consequence of the others pecking out and eating her feathers. If it is only ragged from broken feathers, it is from friction somewhere, or from roosting close to a ragged wall. In the first case she wants no medicine; it would be too bad to dose her with pills because the others pick her feathers. Put her away by herself, and rub the bare spots with compound sulphur ointment. Rub it in with your hand. Any chemist will supply you with it. If it is only a case of broken feathers you have the choice, either to go on, never minding the look, and to leave the quills in the skin, or to pull them out, that new feathers may grow. If it were our case, we should leave the stubs.

ANIMAL FOOD FOR FOWLS (I. A. I.).—The question of animal food for poultry is not a new one. A German Prince (quoting from memory, not having notes at hand), we believe the Prince of Tour and Taxis, kept many thousands in that manner. We have known it tried in England. We have tried it ourselves; as a rule it is a failure. Your "unlimited grass range" is your safety valve. We should not like to eat the eggs laid in hot weather. Those who collect animal substance for converting into manure are not particular in their selection, and if the birds feed on it the eggs must taste. Meat may be tried as a change, and in conjunction with other things very beneficially in cold and trying weather, but as a food it is worse than useless. It causes extreme fat, serious fever of the egg passages, hinders the formation of feathers during the moulting season, and shortens life. There is a theory to which we adhere; that whether you get all the eggs in one year by over-feeding like yours, or spread them over their natural period, you get only your number. The moderately-fed healthy fowl will lay a good average number year after year, and still remain a healthy good-looking bird. The laying in your mention is very good, but we have known a Hamburg lay 240 eggs in a year, and only moderately fed. It was an exceptional case. You began keeping fowls in 1870, and we are now at the beginning of 1873. You have six hens, and your deaths have been three. That is a large proportion compared with your stock. Meat food is unnatural for fowls. When at liberty, as you describe yours to be, they find worms, and enough of animal food to serve them. You need not complain that your fowls do not lay till seven months. It is early enough, and better than you might expect from cross-bred birds. Quackery is getting too much a-head in poultry, and people who keep a few fowls in confinement become poultry correspondents, and detail their experiences without having the candour to say they were failures, and that with them the poultry fit had long since been at an end. It is like a man who details his farming knowledge at an agricultural dinner; speaks learnedly of swedes, roots, and white crops, till a common-sense man puts him down by asking where his farm is, and gets for answer—he has rather less than an acre of land. Throw horse flesh to the dogs. Shut the fowls as much as possible from the filthy heap. Keep them to the clean honest grass. They will lay earlier, they will moult naturally, and last as long again as they do now. We offer you one gratuitous piece of advice—keep true-bred fowls.

FEEDING POULTRY (Beginner).—Begin again, and feed more naturally. We have now more than a thousand hens, all in perfect health. We eschew half the rubbish you name altogether. We have no faith in any food. Rice is worse than nothing. Pepper is injurious rather than otherwise. Fowls dislike oats. They waste, but do not eat buckwheat. Feed with barley meal or ground oats shaked morning and evening. Give Indian corn mid-day. If you can substitute kitchen or table scraps for some of the mid-day meals, do so. Give nothing else. It is an additional expense, laid out to purchase disappointment. Coal ashes are very bad things for a bottom or flooring to a house. If you have no gravel, you can get wood ashes, or chalk, or road grit, or all three together. (I. M. G.).—You are another victim to quackery, and the ignorance of some teachers. You multiply expense, and diminish success. Half your food is waste, and the whole cannot accomplish any result. Out of the eleven foods you name, we advise you to eschew all but four. Feed morning and evening on barley meal or ground oats shaked; mid-day with Indian corn or kitchen or house scraps. Take up your brick walk; nothing is so bad for fowls. Coal ashes are not good. Have you no chalk, no road grit, no clay, no wood ashes? Whatever the nature of the flooring or ground of the run may be, supply the fowls daily with a large ed of growing grass cut with plenty of earth to it. The fowls will eat it all. Lettuces when you have them. Follow this, and you will have eggs.

PENCILLED HAMBURGH FEATHERS (A. B. C.).—1 is a bad feather, and indicates mossy plumage; 2 is a good feather, and should come from a good bird; 3 is a bad feather, and should not make part of an exhibition fowl.

BRAHMA'S MOUTH ULCERATED (Gleum).—In all such cases as you describe we use caustic, rubbing it in without dilution or solution of any kind. It is probable the small swelling is intimately connected with the opening below. Place your thumb above the swelling, squeeze the contents (probably fatty or cheesy matter), until they are discharged into the mouth. With a syringe inject into the emptied sac first warm water till it is cleansed, then some solution of caustic; afterwards take your stick caustic, and use it freely on the fungus. Examine it every two or three days, and suffer no formation to take place. Pullet is laying; but hens have not yet begun.

BUYING PIGEONS (M. J. S. W.).—Prevention is far preferable to having to struggle for a remedy. Do not pay for the birds until after you have seen them. If Pigeons fly back to the vendor after you have purchased them you are entitled to reclaim them. The difficulty is in identifying them.

CHELTERHAM BIRD SHOW (G. J. Barnesby).—Having seen your letters to Mr. Blakston on this Show, and the effort made to screen one delinquent, we decline inserting your irrelevant note.

BRAHMA POOTRAS (T. K.).—If you refer to our advertising columns, you will see many offered for sale.

MOTTLED TUMBLER (T. Moore).—The best coloured picture of a Short-faced Mottled Tumbler is that in Eaton's work. The white should only be at the shoulders of the wings, not on the back. They easily-enough breed too light.

WHAT VARIETY OF PIGEONS TO KEEP (A. H. Morrison).—This is a difficult question to answer. If you have a distinct taste for one variety have that, or be guided by your place for keeping the birds. Buyers please many, and are not, out of Scotland, as numerous at shows as many other varieties. We long to see more of them. You would have a good chance of winning with them, as at many shows they are sadly wanting in numbers. We do not recommend dealers; but for the best see our weekly advertising columns.

HIVES (M. J.).—We find it difficult to advise you in the matter of hives. You have doubtless read what has passed between rival bee-keepers in our

pages on the question of which is the best hive. Fiery are the tempers of the rivals, and a broken head may yet result to anyone who ventures to speak *ex cathedra* on such a subject. Still, we think we may safely say that all hives are good if not too small, and if well managed; but if you are a beginner we should advise you to adopt a plain hive of wood or straw with windows such as you desire, with or without bars, according to your own fancy and skill in bee-management. Why not try the bar hive with super, which you "rather like?" We make ourselves, or get made, our own hives of wood at much less cost than the prices you mention. As to bee-books, besides "Bee-keeping for the Many," you will find Bevan excellent, if you can get the author's original work. Taylor's is good as far as it goes; and you will find some useful hints in "Profitable Bee-keeping" published for Gd. by the Society for the Promotion of Christian Knowledge. We fear your overturned beas are destroyed.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.						Rain.
	Baromet- er at Sea and Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1873.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.		In.	
Feb.	29.331	47.8	46.2	S.W.	87.5	50.1	33.5	62.9	31.8	0.470	
March.	29.326	40.6	38.3	N.	89.0	45.8	39.6	81.6	38.3	—	
	29.737	33.8	31.5	N.	89.1	43.0	30.6	84.3	27.1	—	
	29.499	36.5	35.2	S.E.	88.3	45.7	30.6	49.5	28.8	0.236	
	29.584	42.8	39.4	N.W.	89.4	50.1	35.3	94.3	53.0	0.020	
	29.895	41.5	40.3	S.W.	89.4	49.2	34.1	48.5	30.1	0.097	
	29.761	48.9	48.1	N.W.	41.2	59.1	40.8	102.9	49.2	—	
Means	29.520	41.7	39.9		89.1	49.0	34.9	75.9	32.8	0.418	

REMARKS.

- 26th.—All the snow melted during the night, very rapid thaw; rain about 11 A.M.; quite bright in the early part of the afternoon; wind rather high in the evening and night.
- 27th.—Fair in early morning, then clouded for a time; an outburst of bright sunshine about 1 P.M., followed by more and more cloud till 4 P.M., when, for about ten minutes, it was awfully dark and stormlike, but scarce any rain fell; here a starlight night.
- 28th.—Snow on the ground in early morning, but the bright sun soon melted it; a very fine day throughout.
- 1st.—Fine in early morning, but rain commenced about 11 A.M., and fell at intervals all day; cloudy and damp evening.
- 2nd.—Wind rather strong and cold, but the sun bright, and the day as a whole very pleasant.
- 3rd.—Wet early and late, and cloudy all between; heavy rain at 10 P.M.
- 4th.—The first day we have had for some weeks; bright, dry, and pleasantly warm.

The warmest week since the middle of January, the mean of the five preceding weeks being only 34° 1, while this has been 41° 7. The maximum in sun has been, as might be expected from the sensible power of the sun when visible, much higher than at any time this year. The disappearance of the snow at the beginning of the week was extremely rapid.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 5.

A FAIR amount of business doing, and moderate supply of rough produce. Cornish Broccoli stills keep good and abundant. New Potatoes are from Malta, Lisbon, and the West Indies; prices range from 2d. to 4d. lb. Hothouse Grapes are ample for the trade, remaining at former quotations.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	doz.	3 0 to 5 0	Mulberries.....	per lb.	0 0 to 0 0
Apricots.....	doz.	0 0 0 0	Nectarines.....	doz.	0 0 0 0
Cherries.....	per lb.	0 0 0 0	Oranges.....	per 100	4 0 10 0
Chestnuts.....	bushel	12 0 20 0	Peaches.....	doz.	0 0 0 0
Currants.....	doz.	0 0 0 0	Pears, kitchen.....	doz.	1 0 3 0
Black.....	do.	0 0 0 0	Pears, dessert.....	doz.	5 0 12 0
Figs.....	doz.	0 0 0 0	Pine Apples.....	lb.	6 0 10 0
Filberts.....	lb.	0 0 0 0	Plums.....	per 100	0 0 0 0
Cobs.....	lb.	0 0 0 0	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	0 0 0 0	Raspberries.....	lb.	0 0 0 0
Grapes, hothouse.....	lb.	4 0 10 0	Strawberries.....	per doz.	1 0 2 0
Lemons.....	per 100	6 0 10 0	Walnuts.....	bushel	15 0 30 0
Melons.....	each	1 6 3 0	ditto.....	per 100	2 0 2 6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	3 0 to 6 0	Mushrooms.....	per pottle	0 0 to 2 0
Asparagus.....	per 100	5 0 10 0	Mustard & Cress, punnet	0 2 0 0	
French.....	15 0 30 0		Onions.....	per bushel	3 0 6 0
Beans, Kidney.....	per 100	2 0 3 0	Pickling.....	per quart	0 6 0 0
Beet, Red.....	doz.	1 0 3 0	Parley per doz. bunches	0 4 0 0	
Broccoli.....	bunch	0 1 6 0	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz.	1 0 1 6	Peas.....	per quart	0 0 0 0
Capicouns.....	per 100	0 0 0 0	Potatoes.....	bushel	4 0 7 0
Carrots.....	bunch	0 6 0 0	Kidney.....	do.	0 0 0 0
Cauliflower.....	doz.	2 0 4 0	Round.....	do.	0 0 0 0
Celery.....	bundle	1 6 2 0	Radishes.....	doz. bunches	1 0 1 0
Coleworts.....	doz. bunches	2 6 4 0	Rhubarb.....	bundle	1 0 2 0
Cucumbers.....	each	1 0 3 0	Salsify.....	per bundle	1 0 1 0
Broccoli.....	doz.	0 0 0 0	Savoy.....	doz.	2 0 3 0
Endive.....	doz.	2 0 0 0	Scorzoneria.....	per bushel	1 0 1 0
Fennel.....	bunch	0 3 0 0	Sea-kale.....	basket	1 0 2 0
Garlic.....	lb.	0 6 0 0	Shallots.....	lb.	0 3 0 0
Herbs.....	bunch	0 3 0 0	Spinach.....	bushel	3 6 0 0
Hotsradish.....	bunch	3 0 4 0	Tomatoes.....	doz.	1 0 2 6
Letts.....	bunch	0 2 0 0	Turnips.....	bunch	0 3 0 0
Lettuce.....	doz.	1 0 2 0	Vegetable Marrows.....		

POULTRY MARKET.—MARCH 5.

Our supply is much below the average, but the trade is worse. If there were the usual demand, poultry of good quality would be very dear.

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 13—19, 1873.	Average Temperature near London.			Rain in 48 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
13	Th	Meeting of Royal Society, 8.30 P.M.	50.4	34.0	42.2	15	20	af 6	59	af 5	11	5	6	35	14	9	34
14	F		50.8	34.4	42.6	20	18	6	1	6	21	6	6	48	0	9	17
15	S		50.6	33.6	42.1	21	16	6	3	6	31	7	0	7	16	9	0
16	SUN	3 SUNDAY IN LENT.	51.0	34.0	42.5	14	13	6	4	6	42	8	14	7	17	8	43
17	M	Meeting of Entomological Society, 7 P.M.	52.0	32.5	42.3	13	11	6	6	6	56	9	28	7	18	8	25
18	Tu	Meeting of Zoological Society, 8.30 P.M.	49.9	33.0	41.5	13	9	6	8	6	13	11	43	7	19	8	8
19	W	Royal Horticultural Society, Fruit, Floral, and [General Meeting. Hyacinth Show opens.	50.9	33.0	41.9	15	6	6	9	6	morn.		2	8	20	7	50

From observations taken near London during forty-three years, the average day temperature of the week is 50.8°; and its night temperature 33.5°. The greatest heat was 69°, on the 19th, 1836; and the lowest cold 17°, on the 17th, 1845. The greatest fall of rain was 0.70 inch.

SELECTION OF PEAS.



AM much interested with the trial of Peas, as published in "The Gardeners' Year-Book." Allow me to express thanks for so valuable a trial being brought before the gardening world.

I wish the varieties had been reduced to about a dozen, and divided into three sections—say first, second, and late sorts. I think the trade would have more readily copied the decision. My meaning is, that if a short list of the best varieties were published I think the trade and the public would copy the list. That would be, perhaps, the way to reduce the so-called varieties.

I am surprised that Paradise Marrow is not more grown; it would be a first-class Pea for market gardeners, as it comes in at one time, and the ground would be ready for other crops.

I made the trial of eighty-one varieties last year, and the following list may be of interest to those who like kinds that bear a second crop about three weeks after the first is gathered:—British Queen, Carter's Leviathan, Huntingdonian, Imperial Wonder, Jersey Hero, King of the Marrows, Laxton's Supreme, Prizetaker, No Plus Ultra, Laxton's Prolific Longpod, Laxton's Quality, Laxton's Evergreen, Premier, Munstead Marrow, Victoria Marrow, and Sutton's No. 1 Wrinkled Marrow.—R. H. D., *Seaham*.

FERTILISING CYCLAMEN FLOWERS.

I HAD some thoughts of sending you a few notes on my way of setting the flowers of *Cyclamen persicum*, and should have confined myself to these, had I not seen Mr. Robson's question (page 179), as to whether others were troubled with a large white grub. Last year at this time I had a most beautiful lot of plants which bloomed from Christmas till May in a most satisfactory manner, many of the plants having from thirty to forty open flowers at a time for weeks together. This year I have no bloom, and half the plants are dying.

My treatment of *Cyclamens* from seed is similar to Mr. Robson's. The older plants after blooming I place in a vinery till about July, when they are set on the floor of a late Peach house, and receive but little water till early in September; they are then taken to a greenhouse, and have regular waterings as required. Last year they looked promising, and were bristling with buds till October, when some of the plants began to flag and look yellow. On taking hold of the corms they were loose, and the roots eaten through, though the pots were full of healthy roots, and the grubs (then small) were eating into the corm. In some pots I found as many as ten grubs, in others less. From that time I persevered in trying if the corms were fast to the soil, and I had weekly to take some of the plants to the potting-bench. In November I took some of those that looked strongest to the forcing-pit, but that only hastened their failure. So

in January I determined to risk all bloom, and try to save the corms, so I shook the lot out, and I do not think I found three of them without grubs. When I had finished I counted in the flower saucer into which I had put them, seventy-nine grubs, these I threw into the fire. One-half of the plants will die, and the others are worthless.

I think Mr. Robson's plan of turning the plants out of the pots, or at least repotting them in autumn, will be the best safeguard, as then, though the grubs will be young, they may be seen and picked out. My plants were not disturbed in any way at that time, as I think they do not bloom so well as when the pots are quite full of roots, an occasional dose of liquid manure being afforded.

I never could succeed in setting more than an occasional bloom by the ordinary method of fertilising flowers; but last year, having noticed how readily the pollen fell from the flowers on a fine day, I took the stalk of a flower low down between the finger and thumb of the right hand, tapped the front of the side of the flower against the left-hand thumb-nail, and soon had this covered with the white and yellow pollen. It was then only necessary to take the flowers and dip the stigma of each in the pollen, selecting an occasional flower from which to get more pollen. The hybridist has in this way facilities of crossing for the colours he wants by carrying pollen from dark flowers on his thumb-nail, from spotted ones on the first finger, and so on; and two small labels in the pot will tell, if he desires it, the colour of the fertilised flower and that of the pollen-plant's flower. At the time of gathering the seed I went over the flowers every few days, and the proportion of seed-pods was very satisfactory.—RICHARD CASSON, *Ashfield Garden*.

CULTURAL NOTES ON PLANTS EXHIBITED AT SOUTH KENSINGTON.

THE subjects most worthy of extended notice at the Meeting of March 5th were Camellias, *Cyclamens*, and Roses. Of the first-named there was an excellent display. Mr. W. Paul's collection was very beautiful indeed. The plants were well furnished with healthy foliage and large finely-developed flowers, which showed that the treatment they receive is of the right kind. The potting material recommended by Mr. Paul is sandy loam three parts, one part fibrous peat, and leaf mould in equal proportions, and to this compost he adds "a few small lumps of charcoal and a few pieces of crushed bones." It was pleasant to see such an excellent exhibition of this grand winter flower, as with me the blooms are very late this year; they are just now coming in, and the reason of this is evident: last season was a very unfavourable one for maturing the wood, and I did not place any of the plants in heat, but kept them throughout the season in a cool greenhouse. Now, in order to have early flowers the plants must be placed in a warm moist atmosphere as soon as the flowers are removed, so that the plants may make their young wood, and mature it early. They may

be removed from this temperature (from 60° to 65° at night), when the flower buds are set and in a forward state, to the greenhouse, and plants thus treated will come into flower before the others not subjected to a forcing temperature. The *Camellia* should not be forced to open its flowers in the winter; much fire heat will cause the flower buds to drop-off. It is not so well to flower this plant in March, as the flowers do not last long in that month; sunny days accompanied with the usual drying winds soon destroy the flowers.

The *Cyclamen* was also shown in splendid condition. Mr. Goddard, gardener to H. Little, Esq., of Twickenham, an ardent amateur cultivator, has got well ahead of all competitors; his collection is worth a long journey to see. Many of the varieties raised and cultivated by him have been honoured with first-class certificates from the Royal Horticultural Society. The aim has been to produce new and decided colours, but in doing this, shape and substance in the petals have not been lost sight of. *C. persicum purpureum*, exhibited by him more than twelve months ago, is not only new in colour, but it is also a flower of good shape. White Perfection is of snowy whiteness; the petals are of great substance, and it is one of the most perfect-shaped flowers. In the large collection exhibited at this meeting was a flower splendid in colour; it was of a very bright carmine, but wanting in shape, the segments being too narrow. This plant will no doubt be improved by selection. It is not necessary to say much about culture after the articles which have recently appeared in these pages. All who wish to be successful I advise to keep the plants near the glass, and I find the flowers do not open well when the temperature is too low; from 45° to 50° suits them, with the atmosphere moderately dry.

A very prominent feature at the early Shows is the Roses in pots. Roses are welcome at all seasons, but doubly welcome are they at this time, with the handsome foliage so fresh and green; and the half-opened flowers, so rich and satiny in their different shades of colour, are treasures indeed. But in order to obtain such Roses as those exhibited by Messrs. Veitch on this occasion the plants must be well treated, not placed under Vines or under the back wall of a Cucumber house far from the glass in a high temperature, and where the sun's rays seldom fall upon them. If forced Roses are to be grown satisfactorily, the pots must be placed in a house where there is a low temperature to start with—45° to 50° will be quite high enough; the plants should be as near the glass as possible, and so much the better if the pots can be plunged in a gentle bottom heat, say 85°, although this is not absolutely necessary. The temperature of the house may be gradually increased until it reaches 55° or 60° at night. The Rose does not succeed in a high night temperature early in the season, the flowers produced are wanting in colour and flimsy in character. It does very well to force a few pots of Roses in an early vinery if the Roses are introduced at the time the Vines are started, as the syringing which the dormant canes receive just suits the Roses; but when the night temperature of the vinery is over 60°, and Vine leaves are shading the roof, the Roses must be removed to another house, as the shade and high temperature are both injurious to them. Green fly is the most inveterate enemy of forced Roses; it should be destroyed on its first appearance by fumigating. The "worm in the bud" also requires a quick eye and a sharp pin to pick it out, otherwise the best buds are sometimes destroyed. As soon as the first buds open remove the plants to the greenhouse, so that the flowers may be prolonged.—J. DOUGLAS.

PRINCE ALBERT OR PRINCE ALFRED PINE APPLE.

In your issue of February 20th, there is a short article from "J. M. C.," respecting what he calls the Prince Albert Pine Apple and its unknown origin. In the first place it is Prince Alfred, and not Prince Albert; and as to its origin, I was personally acquainted with the raiser, having fruited some of the seedlings which were not sold when the others were, and the best two seedlings were Prince Alfred and Black Prince. They were very similar in appearance, but Black Prince was the larger and better of the two. They are now quite confounded, and which is Black Prince or Prince Alfred I could not say. The first time I saw them they were truly magnificent, several of them about 11 lbs. weight. Most of them went to Wales. The name of the raiser was Mr. Joseph Foden, Foxholes, Rochdale, Lancashire; he died February 12th, 1857.

He had been gardener to the late John Smith Entwisle, Esq., and his father for many years. He procured the seed of the Pine Apple through Miss Entwisle, who saved it whenever she found any in the Pines at dessert, and the supposition is, that the two splendid Pines are a cross between the Enville and Montserrat. Mr. James Foden, of Lees Street, Accrington, the eldest son of the late Joseph Foden, I have no doubt could furnish you with all the particulars if applied to.—J. WRIGHT.

CARRIAGE AND OTHER ROADS AND DRIVES.

No. 1.

MANY years before the rail had taken the first place as a medium for travelling, good roads were regarded by an eminent geographer as one of the best tokens of a country's progress. As changes in the manner of making roads have been and still are going on, it may not be amiss to glance at least at such as relate to carriage roads and other thoroughfares within the sphere of a gardener's operations, in order to guide ourselves under any circumstances which may occur.

First of all, it must be confessed that although in the present century much has been done to improve our thoroughfares, there are works yet remaining, executed by the earliest conquerors of Britain, proving that many hundreds of years ago roads of a very substantial character had been formed by them in a way that cannot, even at the present day, be improved upon, and it is marvellous how they accomplished the arduous task of making these roads with the limited supply of tools they had to work with. Iron and steel were not plentiful in the second and third centuries of the Christian era, and of wheeled carriages there were but few; yet the causeways of the Romans were of an enduring character, and their walls and pavements equally so. Although in the present state of things the adoption of the primitive causeway cannot be recommended, yet there are cases where it may be necessary to resort to it, and in some parts of England these roads still exist, for such, kept up at the expense of rural parishes, are common enough in the north-west; and although twenty years or more ago they were threatened with destruction by the introduction of what is called the McAdam system, they have since gained favour in high quarters, and are again coming into fashion, as they have been found more economical; even on the score of general utility they have as many admirers as the more smooth and tempting modern highways. The turnpike road from Bolton to Preston was only a few years ago, and I believe is now, one side paved and the other side macadamised, with a division up the middle. The drivers of light vehicles on springs prefer the macadam road, while those of heavy-laden carriages prefer the other; and in districts where hard stones have to be brought from a distance, and where softer ones abound, the latter are better adapted for a paved road than for one which is macadamised, and paved roads of the latter kind of stone are met with that have done duty, with very little repair, for scores of years. Such roads, however, for various reasons, are not to be recommended, except in special cases where a courtyard or other limited space has to be operated upon. I will, therefore, for the present dismiss them. In no case would I advise their formation where pebbles from the river or seashore have to be used for the purpose, for nothing is more uncomfortable to walk upon, and their smooth sides and rounded form render them difficult to fix in position, so that they are always getting loose and out of order. Very small pebbles may be better, but the labour of laying them down is too great to allow of their general adoption on a large scale; consequently, except for water channels and fancy purposes, they cannot be said to come into competition with the more common modes of road-making.

It would appear that for several centuries subsequent to the Roman evacuation of this country no advance was made in road-making, although bridges were built, and, doubtless, by degrees the mode of making roads as now adopted was established. A few stones thrown into some hollow in a horse track, and the same into the furrows made by wheels, when this mode of locomotion became more common, laid the foundation of many a road, the scrub of the forest through which it passed being eventually converted into a fence or hedge. This primitive mode of road-making had, no doubt, also its counterpart in wooden trackways, common in Russia and Canada at the present day, where stone is scarce and timber plentiful; but the value of the latter has risen so much of late years,

and the transport of stone has also been so much facilitated during the same time, that it is not likely that timber-laid trackways will ever be established in England again, excepting in special cases where a morass or some similar place has to be crossed. But as such roads are not likely to be wanted in the immediate vicinity of a mansion, I will pass over these and other primitive roads.

Assuming that a carriage road or an ornamental walk is required between two places that are seen from each other, and the ground between them is such as to present no difficulties to a straight line, let the road be a straight one. However agreeable to the eye a curve may be, it ought only to exist where a straight line is impracticable; but there are many cases where a curve is indispensable, in consequence of some impediment. In this case let the curve be as easy and as graceful as possible, avoiding all short turnings, especially at the bottom of a descent, for a carriage driven briskly down an incline and turned sharply to one side at the bottom, is apt to be thrown over. Let, therefore, curves at such a place be as easy as possible. Further, let it always be a rule to avoid right and left curves near to each other, if possible, unless the reasons for such be very urgent, as some immovable object in the way, for in general use it will be found that the traffic will lean to both the opposing courses, and tend to make such a place straight, certainly a most natural conclusion, for, to use an expression not Hibernian altogether, "two crooks make a straight." However, there are occasions in which it is necessary to adopt a serpentine course, as where there is a tree, pond, embankment, or precipice in the way; then let the curves be as easy as practicable, having due regard to the safety and convenience of the road. One further observation, however, it is necessary to make with regard to curves, and that is not to approach a gate or a hedge on a curve; rather let the curve be made before you face either of these objects, so that there may be a few yards of straight line on each side if possible. Of course, this cannot be done where a gate opens upon a highway; but in such places it is often more convenient to set the gate back, so as to allow ample room to turn before entering or after passing through. Other conditions bearing upon curves will, of course, present themselves according to the character of the ground; for instance, it may be more prudent to skirt the base of a hill than to go right over it; but the zigzags, common in very hilly districts, as I remember witnessing in Derbyshire and Cumberland, are seldom needful in private places.

Certainly more important to the animal that draws the load than the curve above alluded to is the inclination of the road, and a due regard to this is perhaps the main requisite in road-designing, as it is in most cases better to lengthen the journey than have a roadway too steep. Assuming that an elevation of 400 feet has to be attained, and that the question is whether that would be better spread over a mile or a mile and a half of ground, I believe most people would prefer the longer journey; although steeper gradients than either are occasionally met with, the one being a rise of 1 in a little over 13, and the other being 1 in about 20, the latter a very easy rise for country roads, where 1 in 10 is not uncommon. It is better to lengthen a road for wheel carriages rather than have it steeper than 1 in 15, though the latter inclination may be allowed, but ought not, if avoidable, to be exceeded. Sometimes a little tact and management can reduce the gradient to the desired extent by a slight excavation in one place and filling up in another, and it is in matters of this kind that the skill of the designer is brought fully into play; for, be it observed, I am no advocate for deep and expensive excavations, but if slight ones can accomplish what is wanted, by all means let them be executed.

I will now assume that the line of intended roadway has been determined, and that excavations sufficient to fill up hollows have been commenced. Calculations of this kind have to be made in designing and laying-out roads. In making them, remember that if 100 cubic yards of earth have to be removed, it will, in the loose state in which it is broken up to be filled into vehicles, occupy 120 or 130 cubic yards of space, and even more than that at first, but the settlement during the first two years will bring it down to that; so if 25 per cent. be added to the quantity cut away, a rough guess may be made of how far it will fill up a hollow. This being duly attended to and a beginning made, trees and other undergrowth on the part to be excavated should be taken down as the work goes on if only a limited number of hands are employed, but if there are a great number, the trees should be

removed first, as they impede progress; this, however, may be arranged as thought proper.

For removing earth, wheelbarrows are thought to be best and cheapest for distances of 60 yards or under, and carts beyond; but of course the rate of wages or horse hire will vary this rule one way or the other, and also the custom and habits of the workmen employed. Farm labourers will often prefer filling a cart to a barrow, while the professional navvies are at home with either, or rather he can either fill a truck or a harrow. For wheeling purposes iron planks are often better than wooden ones where they have merely to rest on the ground, and they wear much longer. Where the ground is very soft, and the weather wet, something of the kind is wanted. Care must also be taken in the excavation not to go too deep, and in the filling-up of the hollows not to go too high at first; it is better to add a little more material in the hollows, and to take off a little more from the heights, rather than have work to do twice over.

The beginning of a cutting is usually made where the excavation and embankment meet, or if the roadway leads along the side of a hill, it is not bad practice to cut notches out at regular distances all along the side of the road at the intended level. This, of course, applies to places where the excavation of one side forms the embankment of the other; and assuming the hill side to be irregular, with probably a ravine to cross now and then, some judgment is required in laying it out so that the excavation and embankments may balance each other, and the curve and gradients be also in accordance with what is aimed at. Assuming this to be done and the work progressing, it would be well to consider whether any of the materials found in the excavation can be turned to account. It often happens that stone for the making of the road is found in such places. Where this is the case it is, of course, advisable to preserve the stone. It may also happen, as it very often does in gravelly neighbourhoods, that the only stone for such purpose is met with in the valleys. When this is the case it is well to ascertain if there be any on the line that is operated upon, and if so, to dig it out before the place is covered up, and in such a case some additional filling-up will be required; and it can generally be managed. It is well to ascertain before the job is commenced where gravel is found, especially in a district where such material is not abundant.—J. ROBSON.

TOWN ROSES.

I LIVE within a mile of the centre of a large manufacturing town in the West Riding of Yorkshire, but in a comparatively open situation—say a house and garden every 50 yards. Grass grows well without being renewed; and I have an old Blairii No. 2 Rose which has bloomed well for several years in ordinary garden soil and on a south wall. Wishing to grow Roses to peg down in a bed, I have had an open border dug out from 15 to 18 inches deep, and filled-in with small chopped sods from an old leamy pasture (about four tons of sods mixed with two tons of very good, well-rotted, stable manure). I propose planting Provence, Moss, common Cabbage, Charles Lefebvre, John Hopper, La France, Sénateur Vaisse, Duke of Edinburgh, Devoniensis, Victor Verdier, Beauty of Waltham, Mrs. Charles Wood, Madame Vidot, Duc de Rohan, Baronne Prévost, Général Jacqueminot, Gloire de Dijon, Alfred Colomb, Louis Van Houtte, Eugène Appert, Prince Camille de Rohan, Pierre Notting, Jules Margottin, Madame Knorr, Triomphe de Rennes, Anna Alexieff, Niphetos, Xavier Olibo, Abel Grand, Souvenir de la Malmaison, Duchess of Sutherland, Common White Moss, Safrano, and Boule de Nègre. I shall be glad if you will criticise the above and suggest any alterations you think desirable. Next autumn I intend making a second bed if this succeed, and should like a further list of suitable Roses for the purpose.—TOWNS ROSE.

[We fear Devoniensis, Triomphe de Rennes, Madame Vidot, and Niphetos would not do so near a large town with a west-of-England climate; and Duc de Rohan, Pierre Notting, and Xavier Olibo would be doubtful, though all three beautiful Roses if they succeed. We should recommend, amongst others you have omitted, Madame Clémence Joigneaux, Fisher Holmes, Countess of Oxford, Madame Eugénie Verdier, Madame Caillat, Marguerite de St. Amand, Baronne de Maynard, Madame Victor Verdier, Emilie Hausburg, Dupuy Jamin, M. de Montigny, Gloire de Vitry, and Berthe Baron. If you make another Rose bed next year, and will send us the size and number of Roses you intend to plant, we shall be happy to furnish you

with further names, as there are several good Roses coming on that only want another season's trial for us to be able to recommend them. In your position none but the healthier and stronger-growing Roses will succeed; they ought to be on the Maennli stock and planted deep, so as to peg well.]

CHOICE GREENHOUSE RHODODENDRONS.

No. 3.

R. FULGENS.—This seldom exceeds 3 or 4 feet, and is therefore quite within the range of an ordinary greenhouse. It is a compact-growing plant; the leaves are somewhat small, obtusely ovate, and dark green; flowers numerous, bell-shaped, and of a rich-glowing crimson. Native of the Eastern Himalayas, at an elevation of some 13,000 feet.

R. CALOPHYLLUM.—Another dwarf-growing species, seldom exceeding 4 or 5 feet in height, and forming a much-branched and handsome plant. Leaves medium-sized, oblong-lanceolate and acuminate in shape, coriaceous in texture, and shining deep green in colour, which, however, is somewhat obscured in the young leaves by a loose short tomentum. The blooms are produced in lax corymbs, each flower upwards of 3 inches in diameter, pure white, sometimes suffused with rosy lilac on the outside, and always deliciously fragrant. It blooms during April and May. Native of Bhotan.

R. TUBIFLORUM.—This is an elegant and most singular species, attaining a height of 3 or 4 feet. The foliage is medium-sized, somewhat lanceolate, about 3 inches long by 1 inch in breadth; colour rich bronze, shaded with golden yellow while young, but changing with age to deep green. Flowers "tubular, resembling an *Æschynanthus*, and reddish purple in colour." It blooms late in spring and early in summer. Native of the high mountains of Java.

R. MACNABIANA.—This is a dwarf, dense, much-branched plant of garden origin, the result of a cross between *R. ciliatum* and *R. Edgeworthii*. It is abundantly furnished with medium-sized rich dark green leaves. The flowers are freely produced, large, of good substance, very showy, and soft blush white. It blooms during the spring months.

R. EXIMUM.—In its natural habitats this species forms a splendid tree, but as it condescends to produce its lovely flowers when of a medium size, it will become a noble object for the decoration of the conservatory. The leaves are very large, measuring from 12 to 15 or more inches in length; they are very blunt at the apex, and so broad as to appear almost round, especially upon young plants; they are coriaceous in texture. When they are in a young state the upper surface is covered with a loose tomentum, which falls off with age, leaving it bright green above; the under side is clothed with a close soft chestnut brown tomentum. It seems to resemble *R. Falconeri* very much, and the large white flowers are also similar; the flowers are upwards of 2 inches in diameter, and borne in large loose corymbs of from twelve to eighteen. Native of Sikkim Himalaya.

R. KEYSII.—A slender shrub, seldom exceeding 4 feet in height; it is tolerably compact in habit, and clothed with narrow lanceolate dark green leaves. The clusters of flowers are produced from the axils of the leaves; they are long and tubular, reddish scarlet in colour. It is a native of Bhotan, and is often found in the snowy regions.

R. WIGHTII.—This species when mature attains a height of 9 or 10 feet. The leaves are some 4 inches long, lanceolate in shape, rich shining green on the upper side, lighter below, sometimes ferruginous. Flowers large, campanulate, pale yellow in colour, having in addition a blotch of chestnut brown on the upper segments, and freckled with small rosy-pink dots. It is slightly fragrant, and blooms about the month of May. Native of Sikkim Himalaya.

R. MOULMEINENSE.—A species which requires the warm end of the greenhouse. It is a compact shrub, furnished with broadly lanceolate-acuminate leaves, which are smooth, coriaceous, dark green on the upper side, paler below. Flowers in terminal umbels, pure white saving the upper lobes, which are tinted pale yellow. It blooms during midwinter. Native of the Gerai Mountains, Moulemein, at 5000 feet elevation.

R. KENDRICKII.—This is a rare plant, but well deserves the attention of plant-growers both on account of its beauty and hardy constitution. It attains a height of about 6 feet in its native habitats, but blooms under cultivation in a young state. In habit it is bushy and compact. Leaves verticillate, lanceolate in shape, with slightly undulated edges. The clusters of bloom are terminal; the individual flowers are large, and deep

reddish crimson in colour. It blooms during April and May. Native of Bhotan.

R. ARBOREUM.—This forms a noble tree for a large conservatory, but although it flowers freely when of medium size, it can only be recommended where ample space can be afforded it. The leaves are lanceolate-acute, from 4 to 6 inches in length, deep green on the upper side, silvery white beneath. It is a remarkably showy species; flowers large, rich bright scarlet, dotted with black on the upper segments. It blooms during February and March. Native of Nepal.

R. FORMOSUM.—An elegant much-branched shrub, densely clothed with dark green lanceolate-acute leaves, which are about 1½ inch in length. The flowers are freely produced, and are medium-sized, white tinged with reddish pink. It blooms during the months of March and April, lasting a long time in full beauty. This species is also known in gardens by the name of *R. Gibsoni*. Native of Nepal.

R. SESTERIANUM.—This is a most desirable hybrid of compact growth. The flowers are large, pure white saving the upper segments, which are spotted with yellow, and in addition deliciously fragrant. It is a profuse bloomer, coming into flower about the month of April. This variety is the result of a cross between *R. Edgeworthii* and *R. formosum*.

R. LOBBII.—I have some little diffidence about introducing this amongst my list of greenhouse species and varieties, as it requires almost the heat of an intermediate house. If its culture be therefore attempted in the greenhouse, it must have the snugest corner, and be protected from cold draughts. It is a dwarf, compact, free-blooming species, producing a dense truss of flowers, each of which measures upwards of 3 inches in diameter. They are tubular, with a spreading limb, the tube being curved and of an intense glowing crimson colour, rendering it very attractive. It blooms during October. Native of Borneo.

R. BLANDFORDIIFLORUM.—This species does not usually form a handsome specimen, but its flowers are so distinct and beautiful that I feel that it must be included in this enumeration. It grows along the ridges of the mountains in Sikkim and Eastern Nepal, frequently being found at elevations of from 10 to 12,000 feet, where its maximum height seems to be about 6 or 8 feet. The leaves are about 2½ inches long, lanceolate-acute, and coriaceous in texture. Flowers about the same length as the leaves, pendulous, and in the best varieties rich red, in others there is a considerable admixture of green. It blooms during spring and early summer.

R. CAMPANULATUM.—A beautiful but variable plant. It attains a height of some 5 feet or more. The leaves are elliptic-oblong, deep green above, but clothed beneath with a dense white or ferruginous tomentum. The flowers are large, produced in great profusion, and disposed in corymbose clusters, soft pink, changing to white, and having the upper segments spotted with purple. It blooms in April and May. Native of Nepal.

R. CAMPANULATUM WALLICHII.—In general habit this plant resembles the species. It differs, however, in the dense tomentum of the leaves being entirely wanting, and also in its flowers being destitute of the purple spots which are so conspicuous upon the upper segments of the type. It is a very handsome form, which blooms during May.

R. PRINCE OF WALES.—This is a hybrid of great beauty, produced between *R. retusum* and *R. javanicum*. The colour is rich bright orange, in this respect resembling *R. javanicum*, whilst its long tubular blooms show its affinity to *R. retusum*. It is a compact-habited shrub, clothed with glaucous leaves, and blooming in great profusion during the spring months.

With the above variety I shall close my enumeration, and I trust these brief notes may have the effect desired, for amateurs who discard or neglect the culture of greenhouse Rhododendrons are banishing some of the brightest gems of the floral world from their houses.

In addition to the kinds named there are some very handsome-flowered hybrids, which are now, however, rarely to be met with. They were produced by a very intimate friend of the writer, and named by him *R. aureum*; there is a considerable number of varieties all extremely beautiful, their flowers varying between yellow, buff, and orange; they are the results of crossbreeding between *Azalea sinensis* and a *Rhododendron*, but with what species of the latter genus we are left totally in the dark, my friend having carried the secret to the grave with him. This is much to be regretted, as the particular strain was a break in quite a new direction, and would have doubtless led to the origin of a fine class of flowers for greenhouse or conservatory decoration, and, singular to relate, no

hybridisers up to the present time have been able to produce a similar variety, or to discover the missing link.—EXPERTO CREDE.

NEW BOOK.

The Gladiolus; its History, Cultivation, and Exhibition. By the Rev. H. HONYWOOD DOMBRAIN, B.A., &c. London: L. Reeve & Co.

WHEN we were young—that's a few years since—an experienced publisher, just gone to his rest, said to us, "If you want a thing well done, get a parson whose hobby it is to do it." Experience has confirmed the soundness of our friend's advice; we rejoice in having the aid of many "parsons," and not one of them but makes us feel the aid is powerful. The book before us is another proof. We have for some years, amongst other subjects, had the benefit of Mr. Dombrain's knowledge and judgment on the Gladiolus, and in the little volume before us is gathered together and concentrated his information relative to his favourite flower. It is brief, practical, and trustworthy, and we recommend it to every reader who wishes to grow the Gladiolus well.

The preface begins with—

It is impossible to be poetical in writing on the Gladiolus, for it would be as difficult to find a rhyme for it as for porringer. I cannot be sentimental—no lover could call his innamorata, My Gladiolus. To be learned is out of the question; the ancients did not know it, and so I cannot cog a list of quotations from Homer downwards; I have, therefore, only aimed to be practical.

We must pause to object, that it is true no male lover would compare his chosen one to this flower, but the chosen one might be proud to call her "young man" "My Gladiolus." Tall, stately, brilliant, warlike, how we should be exhilarated by being called, even now, The Gladioli. But we must recover our equanimity, and we will quote only the history of the flower from Mr. Dombrain's pages, and cordially recommend them to our readers for the details of culture and exhibition.

No flower has so rapidly gained for itself a prominent position in the florist's estimation as the Gladiolus. While the grower of Auriculas can win prizes with flowers that were in growth seventy or eighty years ago, and the Rose-grower can gaze on the as yet unsurpassed form of Coupe d'Hébé, or Charles Lawson; nay, can revel in the fragrance of the old Cabbage, which was introduced three centuries ago, the growth of the Gladiolus as a florists' flower is a matter of about twenty years; while so great is the improvement that has been of late years made in it, that if we were to take the names of the flowers in the winning stands at our great metropolitan shows, we should not find on them any flowers of more than seven or eight years' standing. In the "Flower Garden," a very complete repository of florists' flowers, to which I now often myself refer,—published in 1860,—no mention whatever is made of the Gladiolus save as a border flower; yet so rapidly has it improved, indeed I may also say through the exertions of one man, Mons. Souchet, of Fontainebleau, that it has acquired a size, completeness of form, and grandeur of appearance, that make it a formidable rival of all other autumnal flowers; occupying less space than the Dahlia or Hollyhock, it rivals them both in the brilliancy and variety of its coloring, and on an exhibition table is by most persons preferred to either.

The Gladiolus has a corm, similar in form to that of the Crocus, and as far as the individual corm is concerned, is an annual, that which is planted dying every year, and new ones being formed above the old corm, from which they have to be separated at the time of taking up. It might seem to be superfluous to mention this, but that I have met with at least two growers who seemed to be in happy ignorance of this fact, although how they could have ever taken up a number and not seen it I cannot understand. For a number of years some species have been grown as border flowers, notably *G. cardinalis*, introduced about 1789, and *G. ramosus*, about 1840. But the present race is the offspring of varied and repeated inter-crossing between *natalensis* or *psittacinus*, and *oppositiflorus*, and especially of *Gandavensis*. *Gandavensis* was a seedling from *psittacinus*, and originated at Ghent, in the same way that that very handsome border flower *Brenchleyensis* was originated some twenty-eight years ago at Brenchley, in Kent, by Mr. Hooker, whose son I had the pleasure of meeting at the Crystal Palace lately. I asked him if he could tell me when it was raised, but he could not. I remember, however, very distinctly obtaining a bulb of it in 1847, at Canterbury.

So lately as the year 1850 hardly any mention is made in the "Florist" of any varieties save those of the *ramosus* section; and in an article on them in that work for 1851, where one of the *ramosus* section, *Von Gageri*, is figured, the writer says three of the most beautiful are those now sold by the trade

under the names of *floribundus*, *Gandavensis*, and *Brenchleyensis*. Coming on to the year 1859, about which period I think Mr. Standish became a grower of them at Bagshot (at any rate in that year he exhibited a good stand of them at the Crystal Palace), Berthe Rabourdin was selected for illustration as being one of the best then in cultivation; and in a list taken from his catalogue I find recommended as amongst the best, such kinds as Madame Binder, Vesta, Don Juan, Dr. André, &c. It must be borne in mind that this was only thirteen years ago; and let anyone take these varieties and compare them with such kinds as Madame Desportes, Norma, Horace Vernet, Phœbus, &c., and can he resist the conclusion that the advance of late years has gone at an accelerated pace? People oftentimes complain when new varieties of florists' flowers are brought out, that there is great sameness; in fact, no improvement whatever; but I have always found that the best way to answer such statements is to give up the point, so far as any individual flower is concerned, but at the same time to ask the objectors how it comes to pass that, although such things are said, yet when an exhibitor desires to select the most taking varieties, he so frequently has to select the varieties of the last few years; and that when we come to compare the drawings by the same artist, the difference is so very striking between those figured a dozen years ago and those figured now. The improvement in each year may not be so very remarkable, but it is appreciable, and in the course of three or four years the strides made strike us very forcibly.

The proper pronunciation of the word is always a puzzle. I have heard of a horticultural society which always kept it, as the Frenchman did his one snipe, to afford sport when other subjects of conversation flagged. By right it ought to be, I think, *Gladiolus*, all short, as if spelt *Gladio's*; perhaps the next most correct form would be *Gladiolus*, and the one which it, I suppose, retains, is the worst of three, *Gladiolus*.

The one person to whom we are indebted for the many valuable varieties of the Gladiolus at present in cultivation is M. Souchet, of Fontainebleau. It is now, I believe, forty-five years since he first attempted their cultivation, and it is not too much to say that the progress made by him during the last ten years has been greater than that of the previous thirty-five. I well remember, many years ago, a friend coming to me with a number of a gardening journal in his hand, and pointing to a figure of a new Gladiolus, "*Don Juan*," which had been just then introduced, asking me if it was possible to imagine anything finer than it—and yet what a poor thing it is now. The extent to which M. Souchet cultivates them may be gathered from the fact, that not only are all or nearly all the new varieties which come to us from France, his seedlings, but nearly all the bulbs also are grown by him. The French growers find that it answers their purpose better to obtain them from him, and hence the whole of his growth passes into their hands. Messrs. Vilmorin & Co., Messrs. Charles Verdier, fils, Eugène Verdier, and Loise, are, I believe, the houses to which they are supplied. His chief cultivations are not now at Fontainebleau; the hotness of the soil, and the vicinity to the forest, which subjects him to the attacks of the grub of the cockchafer, the "*ver blanc*," which French nurserymen dread so much, has led him to remove them chiefly to Montreau, and there many acres are devoted to their culture. M. Souchet does not, I believe, hybridise to any extent, but trusts to the operation being performed by insects.

The example set by M. Souchet was, about the year 1859, followed by that most active and persevering hybridiser, Mr. Standish, then living at Bagshot, and was followed up by him on thoroughly scientific principles for some years; when, finding the soil of his nursery not suitable for their growth, and being then intent on removing to his present nursery at Ascot, he abandoned their culture for other and larger matters, not before, however, he had raised some fine seedlings. I well remember a "*John Standish*," which for brilliancy of colour has never been surpassed, but which was unfortunately lost; while others, such as *Eleanor Norman* (very like *Eurydice*), *Randle Jackson*, and *John Davis* were flowers of good form and character. They were, however, never widely distributed, and with the exception of one or two which I retain for "*auld lang syne*," I do not think any of them now remain in cultivation. Of late Mr. Standish's predilection for them has revived, and he hopes by the infusion of the blood of *G. cruentus*, a species introduced by Mr. William Bull, of Chelsea, to originate a new race. The largest English raiser, however, is Mr. Kelway, of Langport, in Somerset, who may be called the Souchet of England. In his exhibition beds last season he planted 3500 bulbs, and in his store beds 800,000! All who have attended our metropolitan and many of our provincial shows know what splendid stands of Gladiolus he exhibits, most of them being his own seedlings. A published catalogue of them which I have now before me contains, I should imagine, names and descriptions of at least five hundred seedlings, and there can be but one opinion of the excellence of very many of them. Mr. Douglas, the intelligent gardener of F. Whitbourn, Esq., of Loxford Hall, Ilford, has also exhibited some

fine seedlings, which have gained first-class certificates; and my excellent friend Mr. Banks, of Sholden, well-known as the raiser of the finest *Fuchsias* in cultivation, has also produced some fine seedlings, of which I hope to know more anon.

A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 5.

MAXILLARIA.

This genus, although now relieved of many of the species that formerly swelled its ranks, is still a large one as regards both the number of the species and of the varieties. Unfortunately the majority produce only small flowers, and consequently cannot be recommended to the notice of an amateur in such a limited number as here selected. Some, nevertheless, deserve to be in every collection; and when the fine kinds which are still unknown in our plant houses shall have been brought home in a living state, the genus will, I am sure, become much more popular amongst Orchid-growers than it has hitherto been.

Maxillarias are extremely easy to grow. They should be potted in fibrous peat and sphagnum moss, in about equal parts, and require an abundant supply of moisture both to the roots and in the atmosphere during the growing season, but less will be required afterwards. They should not, however, be subjected to a severe period of drought.

M. VENUSTA.—Who does not love white flowers during the winter? None of my fair readers will answer in the negative, I am sure. Well, in this plant you have a perfect gem. The flowers are borne singly upon long scapes; they are very large, pure snowy white, bearing two blotches of crimson on the lip. The flowers appear about November, and continue to grow up from the base of the pseudobulbs for about two months; and as they last in their full beauty either upon the plant or when placed in a vase in the drawing-room, they cannot fail to please even the most fastidious. The plant is a native of New Grenada.

M. LUTEO-ALBA.—A fine, handsome, evergreen plant, with stout pseudobulbs and broad dark green leaves. The flowers in the best variety are very large; they stand erect upon short scapes, the ground colour being creamy white suffused with blotches of tawny orange. Its flowers are produced in great abundance during spring and early in summer, and frequently again towards autumn.—EXPERTO CREDE.

VERBENA CULTURE.

It is much to be regretted that of late years the *Verbena* has almost entirely lost the proud position which it once held amongst bedding plants; in this neighbourhood it has all but disappeared. Notwithstanding the many arguments against its culture as a useful bedder, I still think *Purple King* worthy of a prominent place in our flower gardens. It is an old proverb, and no doubt a true one, that a burned child dreads the fire, but until *Purple King* deceive me I will always advocate its cause, and will not even discard it for a season's failure,

should such occur. I am aware that a great many gardeners discarded the *Verbena* a few years ago, when what is well known as the *Verbena* disease was so prevalent all over the country. I am equally well aware that many more people have discarded it when the whole fault rested with their own inattention or improper treatment. The remark of an old gardener a short time ago strikes me at the present moment, "that people get tired even of a good thing."

I will endeavour in the first place to point out what I think to be the principal cause of failure, and in the next place I shall describe my own mode of treatment, by which any number of plants may be raised with very humble means.

I shall begin with autumn propagation, say September, which is a favourite time with most people. A hotbed is made for the purpose of striking the required number of cuttings. The pots or pans are drained, and a soil consisting of leaf mould and sand, very often two parts of the latter to one of the former, is used. The cuttings are inserted and strike freely enough, and are rapidly hardened off and placed on the cool shelf of a greenhouse for their winter quarters. Such treatment seldom turns out well. The cuttings have too short a time to establish themselves in their pots before winter; they have hungry soil to live in; their wood has no chance of being matured owing to late propagation, and consequently they are liable to be attacked by mildew, green fly, &c., before the following spring. If they even do outlive the winter, we cannot expect a healthy offspring from an unhealthy parent.

I will now describe my own system, which is as follows. Not later than the first or second week of August have a slight hotbed prepared, and in it place the pots or pans containing the cuttings: in eight or ten days the latter will be struck. I then have a number of earthenware pans properly drained, and a good strong compost consisting of loam, a little leaf mould and sand, and some horse droppings (a spent Mushroom bed is capital),

thoroughly mixed together, and of the same heat as the bed in which the plants have been growing; the rooted cuttings are transplanted into these earthenware pans, the soil pressed rather firmly, and they are returned to the bed from which they were taken. A slight sprinkling of water, and shade in case of sun, will be all that is necessary; and in a few days the plants will be found to be growing well, and may be gradually hardened off and placed full in the sun to benefit by exposure to light and air. When housing time arrives they will be found to be sturdy little fellows, hard as nails, and capable of standing any winter in a Peach house or greenhouse. The advantage of plants so treated will be evident enough to anyone having the slightest notion of raising a few plants for their flower garden.

About the middle of February it will be time to re-introduce the plants to heat, say an early vinery. When the plants begin to make fresh growth give manure water twice a week, it will greatly invigorate them. Pots or pans, and material for propagating, should be put in heat at the same time, so that the cuttings may receive no check. I always grow my *Verbenas* in boxes, and find I can manage to keep clean plants



Maxillaria venusta.—(Bot. Mag.)

with more ease than when grown in small pots. I have as yet said nothing about the hotbed or propagating pit. The former is my own favourite, but a rather dangerous playmate for amateurs to attempt early work with. I have seen whole batches destroyed, when a little pebble under each sash, to allow the superfluous steam to escape, or perhaps the pots raised out of the plunging material when the heat was too strong, might have saved them. Drooping leaves with a stewed appearance denote the latter evil.

One more remark before concluding. Do not waste hours listlessly in making cuttings; when cut-off the plants they are ready for insertion, without stripping of leaves and cutting at joints. The great secret in *Verbena* culture is to guard against sudden checks; it is neglecting these little things which ruins many promising lots, and which ends in complete or comparative failure. *Verbenas* may also be grown to great advantage for greenhouse decoration. For out-door work I only grow *Purple King*, *Crimson King*, and *Mrs. Holford*. The former two are so well known for their bedding qualities as to need no comment.—THE GARDENER, *Roby Hall, Liverpool*.

LOW NIGHT TEMPERATURE IN HOTHOUSES.

We have only to go to the school of Nature to learn most unmistakably, from the nocturnal fall of temperature, how erroneous is the practice of hard firing to maintain high night temperature, even in the case of those plants which in their native habitats are subject to the most intense sun and the highest degree of tropical heat, and where the variation between the sweeter heat of day and the chilliness of night is most forcibly experienced. Some may perhaps be inclined to tell us that Nature is not now marching according to primeval law and order in this as well as in other respects. This, however, would be "drawing the subject a little too fine" in reference to the case in point. True, the most successful horticultural practice does not invariably homologate the teachings of Nature, but it does corroborate what we are taught in these nocturnal variations; and surely it is not necessary, at this era of horticulture, to point out how erroneous is the artificial application in excess of the stimulating power of heat throughout the long hours of darkness of a British winter night. The experienced cultivator, at any rate, knows well that such a combination of circumstances is productive only of debility, and the utter want of that stamina in plants which is only attainable under a corresponding amount of light and sunshine, with which we are never favoured in this country during our season of early forcing.

If plants are kept continuously at a high pitch of excitability by the stimulating agency of heat, irrespective of the variations of day and night—of light and darkness—their whole system becomes impaired; and Nature has provided against such a result, not only by the less sudden variation of summer and winter, rainy seasons and dry ones, when a long season of activity is following by a long repose, but by the more sudden variation from a high temperature by day with light, to comparative coolness by night with darkness. Were it possible to reverse this order of things for a single month, when plants are in full tide of growth—could we have light and a low temperature, darkness and excessive heat—we should learn a lesson from the appearance of the vegetable world that would impress us with the beneficence and wisdom of Nature's order of things, and would teach us a great and lasting lesson in early forcing if in nought else.

It is no part of our present intention to enter into the nature and results of the distinct functional operations of plant-life by day and night. Our object, and all that is possible for us, is to throw out a few hints which we hope may stimulate our young and inexperienced readers to study vegetable physiology—the structure and functions of plants; and we are not aware that we can direct them to a better authority than Dr. Lindley, in his "Theory of Horticulture." Suffice it here to say, that in the absence of sunshine at night, there is a cessation in plants of that evaporating and decomposing process by which plant food is perfected and rendered fit for augmenting in a proper manner the growth of plants and trees; and that all excess of heat at night, in the absence of these processes, which are dependant on light, only tends to gorge the system with an overdose of crude sap, producing a mere attenuation of imperfect and unfruitful growth, which by day does not bear the strain of sunshine in a manner so as to result in the production of wood and foliage, flowers and fruits, of which plants are capable when subject to that nocturnal repose which

is as necessary to plants as it is to animal life. Hence all experienced forcers of early flowers and fruits avoid high night temperatures when the days are short and dull, and endeavour, on the contrary, to do the—what may be termed—hard forcing by day with light. Experience has taught that the growth that is squeezed out in midwinter with a high temperature is soft and flabby to a degree that will not bear with impunity that sunshine which is absolutely necessary to restore it to a proper state of tissue.

The too common practice of fixing rigidly any given temperature in hothouses, irrespective of the state of the external atmosphere, we regard as bad practice, and, so far as we are concerned ourselves, we invariably fix the range of temperature over at least 5° or 7°, according to the coldness or mildness of the weather. This not only saves fuel, but it is better for the plants than highly-heated surfaces. Moreover, we have cause to regard the fluctuation of the thermometer, even in steady weather, with much more complacency than we did at one time. And we are at a loss to know from whence such rigid lessons as to heat have been learned. We have several correspondents in the tropics who have remarked to us that if cultivators of tropical *Orchids* at home saw how amazingly they luxuriate with the night temperature frequently below 40°, they would not be so careful about high night temperatures. There is, however, another side to this question. We know that the Peach sometimes gets killed with a British frost, while it stands that of the United States with impunity, owing to the more thorough maturity that the wood attains under an American sun. The same may no doubt be applicable to even many *Orchids*. This, however, teaches us that it is not from wide differences of temperatures in the twenty-four hours that plants suffer, but that it is much more from unnatural growth in the absence of light.

There can be no doubt that this is a question well worthy of discussion while we are face to face with the price of coal nearly tripled within the last two years, and that the hours of darkness are those in which most money can be saved or wasted in connection with our practice in maintaining night temperatures. It is therefore from this, as well as from other points of view, that we would invite further discussion on the subject. The tendency of the present generation of gardeners has been to recede from the night temperatures advocated by those who have gone before them; and our conviction is, that there are yet some steps, not only within the limits of safety, but to be attended with improved culture in many things. The subject has many sides in practice, and a change in this calls for change more or less in other conditions as well.—(The Gardener.)

NOTES AND GLEANINGS.

At a meeting of the VEITCH MEMORIAL Trustees, held on the 5th inst., it was resolved "That the Veitch Memorial Prize be offered triennially, commencing with the present year; and that until the fund reaches the amount of £1000, the interest accruing in the two intervening years be added thereto." It was also resolved "That steps be taken to procure designs for a Veitch Memorial Medal, with the view of having the same executed for use, if possible, at the forthcoming Show of the Royal Horticultural Society at Bath," it being an instruction to the Trustees that an inexpensive medal should accompany the money prizes distributed.

— THE sale of *Orchids*, *Palms*, and other plants, which is to take place at Manley Hall, near Manchester, next month, is one of the largest and most noteworthy that has recently occurred. It will continue for seven days, and there are more than 1600 lots.

— WE learn from the *Journal of Botany* that Dr. ERNST, of Caracas, has been named by the Government of Venezuela to fill the chair of botany in the University of Caracas, where natural history has hitherto never been taught. He is likewise commissioned with the foundation and management of a small botanic garden and the correspondent botanic museum. For the garden he will have the two large yards of the University building, both together 1300 square metres large, which will give about 800 square metres available ground for planting.

— ON Thursday last an important SALE OF ORCHIDS, chiefly the property of Messrs. Baekhouse, of York, took place at Mr. Stevens's rooms. The total amount realised was £933. A fine plant of *Cattleya Mendelii* brought £10, *Oncidium tigrinum* from £4 to £20, *Odontoglossum Rossii majus*, with thirty-five bulbs, £5 15s., *Adiantum farleyense*, with thirty

fronds, belonging to a well-known exhibitor, brought £10; and the splendid *Oncidium maeranthum*, £9.

— A CATALOGUE is printed by M. Rodembourg, head-gardener, and M. B. Morren, Director of the Botanic Garden belonging to the University of Liège, of upwards two hundred species of the interesting order BROMELIACEÆ cultivated in it—an evidence of the zeal with which scientific botany is pursued in some quarters on the Continent.—(*Nature*.)

ON THE RELATIVE VALUE OF CLARIFIED AND UNCLARIFIED SEWAGE.

THE following paper by Mr. William Paul, F.R.H.S., Waltham Cross, was read before the British Association for the Advancement of Science at the meeting at Brighton last year:—

I TAKE it as a good sign of the times that the sewage question is engaging the attention of some of the first and most earnest minds in the country. Every individual in England is interested in it from a sanitary point of view, and to householders of limited means it is a question of vital importance from a monetary point of view. Our sewage must be effectually got rid of at whatever cost. We live by breathing as well as by eating and drinking, and our sewage cannot any longer be allowed to pollute the air we breathe and the water we drink, thereby increasing the death-rate among the weakly and enervating the strong. If we can dispose of it at small cost, ratepayers will be charged low rates; if only at great cost, high rates; and the difference between high rates and low rates is equivalent to the difference between ease and anxiety, comfort and hardships, in thousands of English homes.

But I am not here to-day to enter into all the bearings of this wide and difficult question, but merely to state my views of the value of "clarified" and "unclarified" sewage as manures, and I contend that the vegetable physiologist and practical horticulturist should be able to throw some light on this branch of the subject. I may, perhaps, be permitted to state that I have looked long and earnestly at this question, both from the theoretical and practical point of view, and from numerous experiments have arrived at the conclusion that sewage, when "clarified," is a most valuable manure for porous or well-drained soils, even when cultivated according to the recognised systems. On the other hand I have no faith in the value of sewage of any kind, or for any land, if used in an "unclarified" or sludgy state, unless accompanied with a laborious and costly system of cultivation.

In order to show clearly the grounds of my preference for clarified over unclarified sewage, it would seem necessary to advert briefly to the sources whence plants derive their food, and to the conditions favourable to the free use of this food. Plants feed on the air through their leaves, and on water through their roots. And here it is important to bear in mind that the roots of plants can no more absorb solids from the soil than the leaves can absorb solids from the air; water and gases are their food, they cannot eat like animals, they live by breathing and drinking. Whatever earthy or metallic compounds may be found in the ashes of plants after incineration must have been introduced there in a state of solution, or have been manufactured within the plants themselves. "The water absorbed by the roots contains matters held in solution; these are deposited in the plant, and remain there with about a third part of the water, the rest escaping almost as pure as distilled water."—(De Candolle "Physiologie Végétale," tome I. p. 113.) Now our best vegetable physiologists are of opinion that carbonic acid enters the plant both in the water and the air; the oxygen is afterwards set free by the agency of solar light, the carbon remaining behind in a solid state. I need not enlarge on the manner in which plants feed through their leaves because, practically speaking, we cannot influence them through this channel; in out-of-door culture at least we can only influence them through their roots. To this end—1st, we put on or into the soil such manures as we judge likely, or have found by experience, to promote the development of certain parts of plants; and 2nd, we keep the soil loose or open by ploughing, harrowing, hoeing, digging, and the like, that the air and sun heat may freely enter the soil and render these manures readily available. This embraces the theory and practice of cultivation.

Now, highly important as is the use of appropriate manures to aid in the development of our growing crops, as a cultivator I attach more importance than is commonly attached to the physical conditions of the soil, especially to keeping the surface loose and the soil porous that the water may get away, and that the air and sun heat may follow wherever the water or clarified sewage goes. The clarified sewage is food placed within reach of the roots; the presence of air renders this food more plentiful, and the sun heat stimulates the roots to feed. The fertility of the soil is, therefore, largely influenced by the amount of air and heat which it contains. This brings me to the principal objection which I have to urge against putting sewage on the land

in an unclarified or sludgy state. I am free to admit that the sewage clarifies in its passage downwards, presenting to the roots the same food as if the sewage had been previously clarified; but the surface of the earth is thereby made to act as a filter, and the physical conditions of the soil are altered. The unclarified sewage in passing through the soil has become clarified; but the pores of the soil are more or less closed against the passage of air, and a solid or half-liquid glutinous mass rests on the surface of the earth, throwing back the sun heat. The food is there, but the stimulants of air and sun heat are shut out or greatly diminished, and the fertility of the soil is impaired in a corresponding degree. Horticulturists know well the importance of earth-heat, as many of their highest efforts depend on it. The greatest authority on this subject (Lindley in the "Theory of Horticulture," p. 130), thus alludes to it:—

"It may hence be considered an axiom in horticulture that all plants require the soil as well as the atmosphere in which they grow to correspond in temperature with that of the countries in which they are natives. It has also been already shown that the mean temperature of the soil should be above that of the atmosphere."

Again (page 138)—

"As scarcely any of our cultivated crops are natives of countries so cold as our own, it is manifest that they all require to have the earth warmed for them, or are much the better for it."

The free access of air to the soil in which plants grow is not less important than that of heat.

"The roots of plants, notwithstanding their underground position, are subject to the action of the air which permeates the earth. We have long known that trees suffer if we enter the base of the stem in such manner as to exclude the air from their roots. The roots suffer more from contact with stagnant water, even when rich in nutritive matters, than when in contact with running water, because the latter brings them a constant supply of oxygen. M. Th. de Saussure found that plants whose roots were placed in gas deprived of free oxygen died at the end of a few days, whilst those placed in contact with the atmosphere lived and prospered."—"Physiologie Végétale," tome I., pages 136-7.)

Many years ago I used unclarified sewage extensively, and for a lengthened period. The results were not satisfactory until I adopted the practice of stirring the surface of the soil after every application of the sewage. The results then exceeded my expectations, but when estimated were not found equivalent to the largely increased cost of labour. Afterwards the sewage was clarified by the use of quicklime and used for a lengthened period in this state; this was judged better than the use of unclarified sewage without labour, but not equal to its use with frequent hoeings. At present I have two large cesspools into which the sewage is diverted and allowed to settle, becoming almost clear by subsidence, in which state it is freely used and found most valuable.* In conclusion, I would say that I am of opinion that the sludge in sewage is valuable as a manure. But I object to its application to the surface of the soil in a semi-liquid state. If so applied the surface of the soil should be constantly stirred and broken, which, of course, involves considerable expense. It then becomes a question whether it is not more economical to separate the sludge, employing it as a solid manure or for other purposes, leaving a clarified liquid behind for irrigation.

VEGETATION AND GARDENING IN EGYPT.

EGYPT has no woods or thickets. It would hardly possess a single tree without the care of man. From this dearth of wood follow several obvious consequences, which may be worth noting. First, all the houses of the lower class—that is, of the great mass of the people of Egypt, must be built of crude, or sun-dried brick. There is no wood for posts and planks, or to burn brick for such folk as they. This obliges them to live in houses that are singularly mean; and, according to our ideas, insufficient for their purpose. They can only have a ground-floor, for no ceilings can be made without wood. Nor, for the same reason, can they have any roofs, there is no wood for rafters. Nor, if they could manage to get the rafters, would they be able to get the fuel for burning the tiles. It follows that only a part of what ought to be the roof can be covered in, and that in the modest way, for protection against what Heaven may send in the way of heat, or cold, or wet. This partial covering is very ineffectual. It consists of a few Palm leaves, or of the stalks of the Millet and Maize, laid horizontally from wall to wall; upon this Wheat and Barley straw is generally piled till it has been consumed by the donkeys, and goats, and camels, and buffaloes. Such is the rule; a real serviceable roof being the exception. These roofless ground-floors, which are the house, must also be floorless, for there is no wood either for flooring or for burning floor-bricks. Then the floor must be dust. This makes every house a flea-preserve.

A further consequence is, that within these floorless, roofless, windowless, doorless mud enclosures there can be no such thing as furniture—nothing to sit upon, nothing to stow anything

* From experiments not completed when this paper was read, I found a marked difference in *Geraniums* watered with sewage clarified by simple subsidence, and with sewage clarified by lime, in every case in favour of the former.—W. P.

away in, nothing to put anything upon; not a cupboard, a chair, or a table. But this matters little to a people who can always sit and sleep on the dry ground; and who have nothing to stow away. Everywhere I saw men, and sometimes even women, sleeping out of doors, even in mid-winter.

Among the trees of Egypt, the first place is held by the Palm. On landing at Alexandria you find it around the city in abundance, and throughout the country you are never long out of sight of it. It is seen to most advantage from the river against the sky. It appears most in place when, in sufficient numbers to form a grove, it overshadows some river-side village. You there look upon it as the beneficent friend and coadjutor of the poor villagers. You know that it gives them much they could not get elsewhere, and which they could ill spare—shade, boxes, baskets, cordage, thatch, timber, and the chief of their humble luxuries, in return for the protection and water they have given to it. We often hear it spoken of as the queen of the vegetable world. I had rather say that it is a form of grace and beauty of which the eye never tires.

The tree usually employed in forming avenues, where shade is the first object, is the broad-podded *Acacia*. The distinguishing feature in this is the largeness and abundance of its singularly dark green leaves. Its foliage, indeed, is so dense, that no ray of sunlight can penetrate through it. The effect of this is very striking. In one of these avenues that has been well kept you will find yourself in a cool gloom, both the coolness and the gloom being such that you cannot but feel them, while you see the sun blazing outside. The road from Boulak to the Pyramids of Gizeh is planted the whole way with these trees. For the first two or three miles they are of some age, and having now met overhead above the road, the shelter, even at midday, is complete. For the rest of the way the trees are not older than the Prince of Wales's visit, they having been planted along the sides of the road that was on that occasion made for him. No tree more easily establishes itself, or grows more rapidly, if sufficiently watered. All that is required is to cut off a limb, no matter how large, or from how old a tree, and to set it in the ground. If it be supplied with water it grows without fail. This *Acacia* is the *Lebekh* of the natives.

Another tree used in avenues, and which grows to a greater height and with larger limbs than the *Lebekh*, is the Egyptian *Sycamore*. It is a species of the Indian Fig. It has large limbs, which enable you to see the whole of its skeleton. The skeleton of the *Lebekh* is concealed by the multiplicity of its branches, and the density of its foliage. There is a fine specimen of this *Sycamore* in the first Nubian village, on the way from Assouan to Philæ, and another equally good on the bank of the river just opposite Philæ. Trees of this kind have more of the appearance of age than others in Egypt. Their bark is of a whitish colour, and their large branches are covered with little leafless spur-like twigs, of a dingy black, on which are produced their round green fruit, about as big as bantams' eggs. These spur-like processes on the branches are, I suppose, the homologues of the descending aerial roots of its congener, the Banyan tree of India, of which latter also I saw one or two good specimens in gardens in Egypt. It was from the imperishable wood of the *Sycamore* that the ancient Egyptians made their mummy cases. The fine old avenue from Cairo to Shoubra, three miles in length, is composed of generally good specimens of this tree, intermingled with the *Acacia Lebekh*, and here and there a few *Tamarisks*.

The tree which approaches nearest to the ability to support itself in Egypt without man's aid is the *Tamarisk*. It is a tree that drinks very little, and takes a great deal of killing. You see it growing, as a stunted shrub, in the nitre-encrusted depressions of the desert in the neighbourhood of Ismailia, and elsewhere, where it can only very occasionally be refreshed by a stray shower. Wherever it can get the little moisture with which it is satisfied it becomes a graceful tree.

The thorny small-leaved *Acacia* gives but little shade. It produces a small yellow flower, which is a complete globe, and has a sweet scent. It is in flower at Christmas. If this is the *Acanthus* of Herodotus its wood must have been largely used when he was in Egypt for the construction of the river boats, which were often of very great capacity.

The *Dôm Palm* is occasionally seen in Upper Egypt. The first I fell in with was at Minieh. That, I believe, is the most northerly point at which it is found. Its peculiarity is that, when the stem has reached a few feet above the ground, it bifurcates. It then has two stems and two heads. When these two stems have grown out to the length of a few feet they, too, each of them bifurcate, following the example of the parent stem. There are now four stems with heads. Another repetition of the process gives eight, and so on. In fact, it is a branching Palm, and every branch is a complete Palm tree. The whole is a cluster of Palm trees on one stock.

These are all the trees one notices in travelling through the country. The list is soon run through, but I saw that an attempt was being made to add to the list. In the neighbourhood of the Viceroy's palaces I found two species of Australian

Eucalyptus. They appeared to approve of the soil and climate, and gave promise of soon becoming fine trees. They do well at Nice, and will probably do better in Egypt.

Every one of the trees I have mentioned remains, in Egypt, in full foliage throughout the winter.

That horticulture was a favourite occupation among the ancient Egyptians is shown abundantly by their sculptures and paintings. Representations of gardens are so common that we may infer that no residence of any pretensions was considered complete without one. We even see that rare and interesting plants, brought from Asia and Ethiopia, each with a ball of earth round the roots, carefully secured with matting, formed at times a part of the royal tribute. The very Lotus, which may be regarded as, among flowers, the symbol of Egypt, is now supposed to have been an importation from India. In this matter, as in every respect, the country has sadly retrograded.

Of course all sub-tropical and many tropical trees and plants do well here, if only they be regularly supplied with water. I never saw more interesting gardens on a small scale than those of S. Cecolani at Alexandria, and of the American Consul at Port Said. The same may be said of the garden of the Viceroy at his Gezzerah palace. In them you will find the plants we keep in stove houses doing well in the open air, and many of them in flower at Christmas, or soon after. In the first-mentioned of these gardens I saw very beautiful specimens of the Norfolk Island Pine, about 30 feet high, growing luxuriantly. There was also a species of *Solanum*, which, if I knew its Christian name, I would commend to the attention of those who are endeavouring to produce in their English gardens something of a sub-tropical effect. It was about 10 feet high, and was so regularly filled up with branches as to have a completely symmetrical, a somewhat dome-like form. Its leaves were large, rough, and prickly. At the extremity of each twig, or lesser branch was a large branching spike of purple flowers. The individual flowers in the spikes of bloom were about the size of the flower of its relative the common Potato, and similar in shape. It was a most effective shrub. I never saw one more so.

It is generally supposed amongst us that our English gardens are quite unrivalled. They may be in the thought, care, and money bestowed upon them; but in variety of interest they are very inferior to Egyptian gardens. These may contain all the plants we consider most beautiful and most worthy of artificial heat; which, too, may be grouped with Bamboos, Palms, Indian Figs, Bananas, Cactuses, *Daturas*, *Poinsettias* 9 or 10 feet high, and many other plants and trees one would go some way to see growing with the freedom and luxuriance that is natural to them in this bright, winterless climate.—(*Egypt of the Pharaohs and of the Kédive*.)

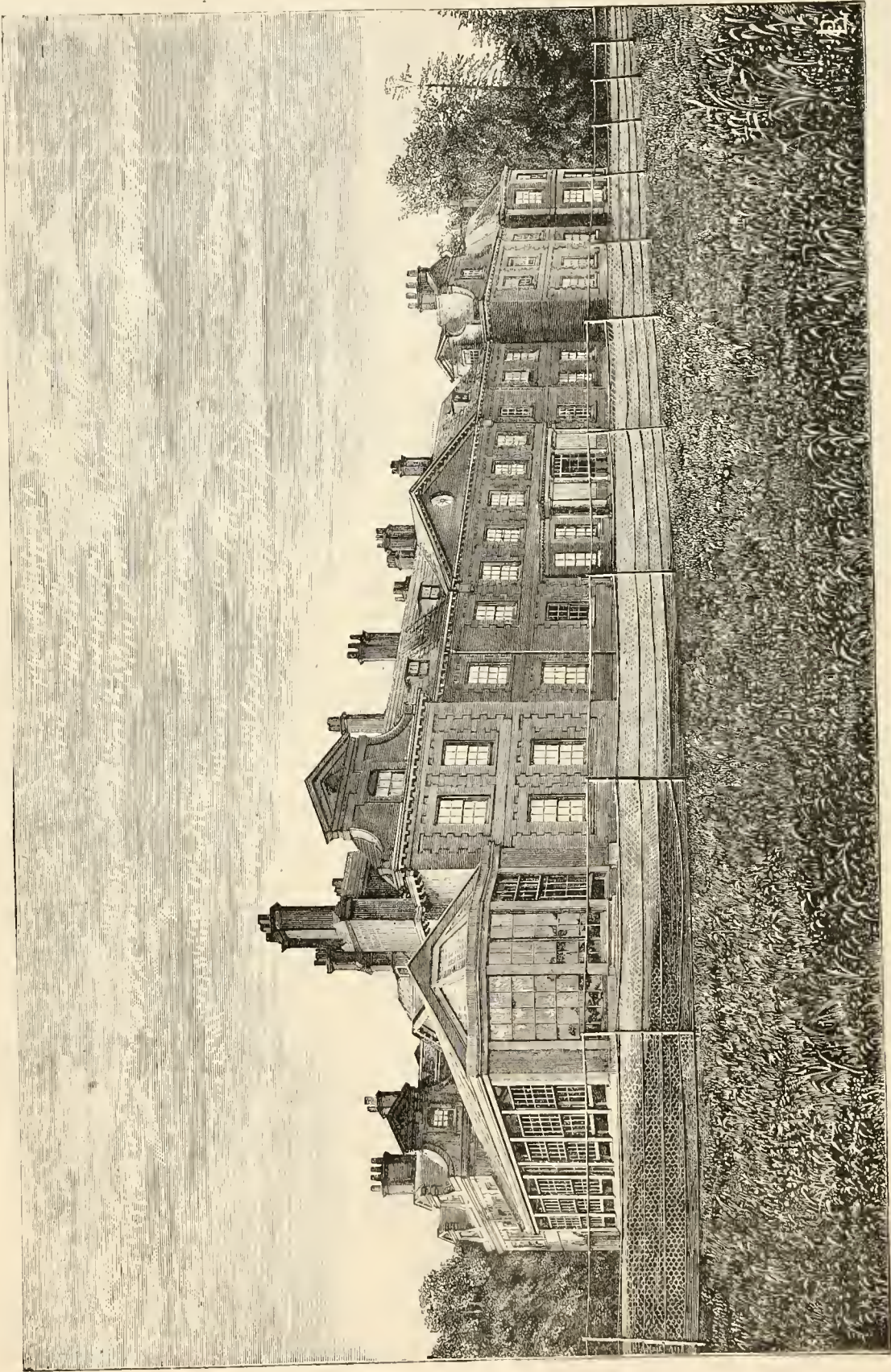
STRATFIELDSAYE.—No. 1.

THE SEAT OF THE DUKE OF WELLINGTON.

In Anglo-Saxon times one *Bundi* held *Stradfield*, and when Domesday Book was compiled it had passed to a Norman, Hugh de Port. It is variously spelt in subsequent records, but all indicating that *Strat*, a public road, and *feld*, pasture, are the Anglo-Saxon derivatives of the name—a name justly applicable, as it was by the side of one of the roads leading to the Roman Silchester. This "pasture land by the public road," from belonging to the family of *De Saye*, had the last syllable added as a distinctive affix. In the reign of Edward III. it passed by marriage to the D'Abrihecourts, Sir Nicholas of that name taking to wife Sibilla, heiress of Thomas de Saye. Sir Nicholas was Constable of Nottingham Castle and Keeper of Sherwood Forest. After his marriage he was Sheriff of Hampshire. Stratfieldsaye remained in the possession of the D'Abrihecourts until the reign of Charles I., when, again by the marriage of an heiress, it passed to Sir William Pitt, Comptroller of the King's Household. He made it his residence, died, and was buried in its parish church in 1636. From his younger brother descended Earl Chatham and Lord Camelford. His grandson married a daughter of John Savage, Earl Rivers, and their grandson was created Lord Rivers in 1776. In 1815 the House of Commons voted £200,000 either to build or purchase a mansion and estate for the first Duke of Wellington. At first there were rumours that the estate was to be in Cheshire, but at the close of 1817 it was announced that Stratfieldsaye had been purchased from Lord Rivers for £263,000, the timber being valued at £150,000.

Stratfieldsaye is three and a half miles from Mortimer, a station on the branch of the Great Western Railway between Reading and Basingstoke.

In early Norman times there was in the parish a Priory dedicated to St. Leonards, and established in 1170 by one of the Stotteville family. The Priory itself was within the boundary of Berkshire. Being an alien priory belonging to the Benedictine Monastery of Vallemont, it was suppressed in



STRATFIELDSAVE.

the 1st of Edward IV.'s reign, and the lands given to Eton College.

The principal approach to the mansion of Stratfieldsaye is from the north, through an avenue a mile long planted with noble Elms. The roadway is about 12 feet in width, and passes over a gently undulating surface, so that at first the full length of the avenue is not seen; the trees are some 40 feet apart in the line, and stand back on each side 19 or 20 feet from the road. They were planted between the years 1605 and 1628 by the Sir William Pitt before alluded to, and though so old and in some cases rather stag-headed, they are generally quite sound, which is more than can be said of most of the Elms near London. Mr. Loudon states that they are a broader-leaved kind than the common English Elm, and not so tall, but as the foliage was off the trees at the time of our visit there was no opportunity of examining it. So keen an observer as Mr. Loudon was not likely to have been mistaken; but probably after all, the greater breadth of the leaves which he remarked was due to local circumstances, which appear to have had an influence on other trees which will be hereafter noticed. The height of the Elms certainly did not appear to be so great as that of others of similar age elsewhere, but where all the neighbouring trees are so tall the eye is apt to be deceived; their girth, however, was great, being from 15 to 24 feet. Between the Elms, Horse Chestnuts were planted alternately by the first Duke in order to replace the Elms when these could stand no longer, but, from being so much overshadowed, the Horse Chestnuts have attained no considerable height, nor has their progress in other respects been entirely satisfactory.

A continuation of the avenue, about 500 yards in length, between Yews and Oaks brings us to a carriage ring round a wide circle of turf, and in front of the principal entrance to the house, which is on the left. To the right are the kitchen gardens concealed by plantations, and on the same side are the stables and other buildings, while terminating the drive is seen in the distance the parish church. Near the mansion we noticed a group of remarkably fine Elms, upwards of 100 feet in height, and from 15 to 20 feet in circumference of stem. These form stately objects well worthy of attention, and not less noteworthy is a deciduous Cypress immediately in front of the conservatory attached to the south end of the house. This magnificent tree is 65 feet in height, and its girth at the base of the stem is 9 feet 6 inches. The conservatory just alluded to contains some healthy fruiting Orange trees, Camellias, Azaleas, Yuccas, Araucaria Bidwillii, and a variety of other inmates which serve for its more temporary adornment.

We now reach the east side of the mansion, of which the accompanying is a representation, engraved from a photograph by Mr. G. H. Hay, of Hanover Place, Upper Baker Street. It will be seen from this that the house is not remarkable for its architectural character, and its height is small in proportion to its size, but it is commodious, and in every sense comfortable. From the gravel terrace in front the grass slopes down to the river Loddon, which is here widened by means of weirs so as to present a good breadth of water instead of its natural very limited dimensions. Southwards there is a broken water-fall, and beyond the river in all directions fine Oaks and other timber trees meet the eye, though from their number and size they somewhat confine the view, especially as the ground rises from the valley in which the river flows; still there is sufficient breadth between the mansion and the river, and the river and the trees, to give a better idea of the great extent of the park than can perhaps be elsewhere gained. Here, however, we must pause, deferring till next week the notice of other and more important features of this noble domain.

CHEAP FUEL.

THE present high price of coal has led many to economise their fuel, and I being one of the number have adopted a very simple mode of doing so. I had heard that clay and coal dust mixed would burn, and as I had a few loads of clay at hand, I thought I would try it in this way. To one wheelbarrow load of small coal I put two of clay, mixed it up together as one would to make common brick, and cut it in the same-sized lumps. After the fire had burned clear I put on several lumps quite wet, and they made an excellent fire; and I find if they are stacked in a shed to dry they burn all the better. The boiler I have is a saddle boiler, and with these bricks and a little dust of coal a fire would last ten or twelve hours. If there is a quick draught another load of clay may be added in

mixing, also cut straw or gas tar, but in this case there is rather more trouble in mixing.—O. ORPET, Cirencester.

[We have known fire balls made advantageously of clay and cinders.—Eds.]

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.]

PHILODENDRON RUBENS (Ruddy Philodendron). *Nat. ord.*, Aroideæ. *Linm.*, Monœcia Triandria.—A native of Venezuela and Trinidad. Spadix white; spathe crimson internally. Plant about 2 feet high.—(*Ibid. Mag.*, t. 6021.)

ARPOPHYLLUM SPICATUM (Spiked Arpophyllum). *Nat. ord.*, Orchidaceæ. *Linm.*, Gynandria Monœcia.—A native of Mexico. Flowers dark rose. It was introduced here by Hartweg in 1839.—(*Ibid.*, t. 6022.)

ARISARUM VULGARE (Common Arisarum). *Nat. ord.*, Aroideæ. *Linm.*, Monœcia Polyandria.—Native of islands and regions near the Mediterranean. Dr. Hooker says, "The specimens here figured are from Morocco, where the plant abounds, and where my attention was directed to its root by Mr. Flumot of Saffi, as affording a food to the natives during their frequent seasons of famine; when they are dug-up, washed, and cooked, notwithstanding their poisonous properties. The Arab name is Iroune. A similar use is made of the roots of the great Arisæas in the Himalaya."—(*Ibid.*, t. 6023.)

NIDULARIUM SPECTABILE (Showy Nidularium). *Nat. ord.*, Bromeliaceæ. *Linm.*, Hexandria Monogynia.—It is a native of Brazil. Flowers crimson, pink, and purple. "The genus Nidularium was established by Lemaire in 1854, and includes various species of the old genera Bromelia, Billbergia, &c., together with others, of which a dozen are enumerated by Morren in his valuable 'Catalogue des Broméliacées cultivées au Jardin Botanique de l'Université de Liège' (1873). N. spectabile was imported by Mr. Bull from the interior of Brazil, and flowered in his establishment in December, 1872. It is a very striking plant, allied to N. Meyendorffii, Lemaire (Ill. Hort., t. 245), but very distinct; and may at once be recognised from any species hitherto cultivated in England, by the singular bright blood-red ends of the leaves, which form a clearly defined and singular contrast both to the bright green of the upper surface and the glaucous dull green of the lower surface of the leaf."—(*Ibid.*, t. 6024.)

ARECA PUMILA (Dwarf Areca). *Nat. ord.*, Palmaeæ. *Linm.*, Monœcia Monadelphia.—Native of the Malayan Archipelago. It is an elegant little Palm not more than 4 feet high.—(*Ibid.*, t. 6025.)

PICOTEES, Mrs. Hornby—Mrs. Fordham.—"They were raised by Mr. Turner, of Slough, by whom splendid examples were exhibited last season, which secured for them the highest awards. Mrs. Hornby is a light-edged red variety, of large size, and the finest in its class; it is a charming flower, on account of its purity and even marking, as well as for its finely-shaped smooth petals. Mrs. Fordham is a large and well-marked flower of the medium-edged bright rose type, also a grand and effective flower for general cultivation, and the finest in its particular class, the flowers being large and full without confusion. The admirers of this delicately-beautiful and fragrant flower will find both these varieties to be grand acquisitions to their collections."—(*Florist and Pomologist*, 3 s., vi. 49.)

A PLEA FOR THE ROSE MRS. RIVERS.

I HAVE often noticed in the columns of the Journal that Mrs. Rivers is counted a bad and weak grower. Now, I cannot agree with your correspondents in that conclusion, for I have Mrs. Rivers growing in a bed with twenty-two other varieties—viz., Acidalie, Alfred Colomb, Abel Grand, Boule de Nègre, Comtesse de Chabillant, Charles Lefebvre, Céline Forestier, Duke of Edinburgh, Exposition de Brie, Gloire de Dijon, John Hopper, Miss Ingram, Madame George Paul, Madame Victor Verdier, Madame Boll, Madame Eugénie Verdier, Madame Margot, Monplaisir, Pierre Notting, Prince Camille de Rohan, Sénateur Vaisse, and William Griffiths. With me Mrs. Rivers is quite equal in growth to any of the above varieties, with the exception of Gloire de Dijon and Boule de Nègre. I budded them all in September, 1871, on the Briar; and in 1872 Mrs. Rivers produced some first-class blooms of the finest quality, fit for any exhibition stand. It made, notwithstanding, a good strong growth from the buds, the shoots measuring 3 feet 9 inches in length, and 1½ inch in circumference at half their

length. It is growing on a flinty chalk subsoil.—G., *Bradford Gardens, Dorset.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

TAKE every opportunity of destroying all injurious insects; their numbers will be greatly lessened. Set mouse-traps about the garden. In favourable and early situations the *Asparagus* beds may be forked over. A little Lettuce seed may be sown upon them at the same time; also sow *Asparagus* seed. Make a sowing of early White *Broccoli* for autumn use. Transplant *Cabbages* from the autumn-sown beds; earth-up the early crops when the weather is favourable. A sowing of *Cardoons* may now be made if they are required early. As soon as the *Carli-flowers* are thinned-out to three plants under each hand-light, loosen the soil about them, and draw it round the stems of the plants. For *Cucumbers*, keep the lights free from dirt; wash them inside and out if there are lights to shift on. Keep the heat of the beds from 70° to 75°, but particularly guard against a violent bottom heat. *Chervil* and *American Cress* should now be sown. Sow *Leeks* on a border for planting out, or sow where they are to remain. A good sowing of *Parsley* should now be made if not already done. Clear and loosen the soil between the rows sown last season. Two or more crops of *Peas* of different kinds should be sown. The main early crops of *Potatoes* should be planted as soon as the weather will permit. Beds of *Sea-kale* may now be made. *New Zealand Spinach* should now be sown in pots or boxes, and placed in a gentle heat. Make another sowing of Early Dutch *Turnip*; or *Stone*, a sort called by some gardeners the *Snowball*, is excellent.

FRUIT GARDEN.

Proceed with the pruning and nailing of *Apricots* and *Peaches* as expeditiously as the weather will permit. If cut too soon access will be given to the frost, which will induce gum and canker in unfavourable situations. Daub all wounds, especially large ones, with thick paint. Anoint *Peaches* with a mixture of clay, soot, sulphur, and lime, adding soft soap and tobacco juice if you think necessary. The great use of such painting is to cover the eggs of insects, and thus prevent their hatching. For this purpose nothing is better than pure clay well worked up, soot and sulphur, if they do not nourish the buds, keep off birds, and lime gives a lighter appearance than if soot alone were used, and helps to keep the shoots in a mere equal temperature by day and by night.

FLOWER GARDEN.

The weather has been so excessively precarious of late, that it is doubtful whether many of the operations already recommended have been performed, therefore look back to former calendars and bring the work up as expeditiously as possible. Worms are very troublesome this showery weather, but they may be kept in check by watering the turf occasionally with lime water made from stone lime, or they may be brought to the surface of the ground and then removed by hand by watering with a weak solution of corrosive sublimate. The best plan to dissolve this mineral poison is to add to it its weight of spirits of salts. Attend to mowing, sweeping, and everything that tends to promote neatness. Vacant beds in the flower garden will be benefited by being dug over again when they are dry. If it is intended to make any additions of new shrubs or trees in the shrubbery or pleasure ground, they should be planted immediately. *Paulownia imperialis* is a noble plant, if for its leaves only, and should be planted on every lawn. It will require protection until the stem becomes woody, but after that it will stand as well as *Catalpa syriaca*. *Arancaria imbricata* is one of the noblest plants we have, and many of the *Cedars*, *Pinuses*, and *Cypresses*, to say nothing of *Magnolias*, are very beautiful. Continue the covering of tender plants some time longer. *Pinuses* suffer more from the destruction of their early spring growth than from any other cause, therefore endeavour to check it by admitting a current of cold air from the north side, and by keeping the plants shaded on sunny days. A class of *Auriculas*, styled *Alpines*, have made great advances in public favour of late; they are sells of all shades, from light pink and grey to dark crimson and deep purple, the eye or centre of the flower being yellow. Endowed with extreme hardiness and beauty, they likewise seed profusely. It is dangerous to grow them in the vicinity of *Auriculas* with white ground if seed is an object, as the humble bee, particularly, will carry the farina from one to the other, and thus spoil the crop of seedlings. They do not appear so susceptible of wet as the *Auricula*, and certainly are not so particular as to situation, flowering and flourishing almost anywhere. They are usually exhibited at spring shows, and cannot be too strongly recommended to the admirer of early flowers. Plants in frames must be watched in rainy weather, taking care that they have no drip. Should this be the case, the laps must be putted the first fine day. *Polyanthuses* are now throwing out fibres round the neck of the plant. If increase is more an object than blooms, they may be planted to advantage now. The breed of this class of florists' flowers

requires improvement, and has made less progress than any of the others. Tulips ought to be protected from heavy soaking rains, as well as sharp frosty winds, which we may yet expect. Since beds of *Ranunculuses* have been planted we have had heavy wet; they should be protected with mats, as the roots when swelling are susceptible of frost, which often occurs after much rain at this time of the year. Keep seed pans moderately moist. *Dahlia* cuttings that are rooted may be potted off in light vegetable or leaf soil, and put in close frames till they take fresh hold. Young plants of *Pansies* put out in beds last autumn will flower better than those planted in spring. Where additions are requisite they should be made now, taking care in the purchase of them that you secure the roundest flowers, with the colours as well defined as possible. The smoother and thicker the petal the better, and the ground or body colour should be of one shade and perfectly clear, bearing in mind that white tinged with yellow, or yellow stained with orange, will not now do.

GREENHOUSE AND CONSERVATORY.

Climbers will now begin to spread over the conservatory, and will require particular care in training them regularly at first. *Stephanotis floribunda* seems rather more hardy than *Passiflora* Londoni, it will live and grow in an average temperature of 45° in winter. Little stringing should be done here on account of the bloom, water must, therefore, be poured on the pathways and any spare places to keep the atmosphere moist and cool. See that insects are kept down and that plants have sufficient room. Some of the more hardy and common plants in the greenhouse might now be turned out to some sheltered place in order to give more room to the finer kinds. Young plants in small pots might now be potted on the one-shift system, but for this it is essential that their roots are not much matted and that they are in a growing state.

FORCING PIT.

Keep every part of this pit full of plants, cuttings, &c.; any plant that can be forced into flower during the spring is desirable. All the species of *Jasmine* force well if they are kept under-potted, and if their young wood is constantly stepped in the growing season they form loose bushes and give up their climbing habit. All American plants require large quantities of water. Introduce dry bulbs of sorts to succeed *Gloxinias* and *Achimenes*, and sow a few seeds of *Balsams*, *Cockscombs*, *Bewallias*, *Thunbergias*, &c.

PITS AND FRAMES.

Among the first things to be attended to, especially where a large stock is required for flower-garden decoration, is the propagation of *Chrysanthemums*. Pot *Tuberose* in 48-sized pots in turfy soil, and place them in gentle warmth until they begin to grow. They are useful for setting among plants near the windows, or for the decoration of the hall or drawing-room.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The heavy rains render much out-door work as regards sowing, &c., quite unsuitable. The weather when bearable at all, was very suitable for proceeding with some out-door work, such as turfing, gravelling, and read-making. In view of certain changes we moved a lot of *Rhubarb*, *Sea-kale*, and *Artichokes*, as such operations required just the least dryness of the surface of the soil—a very different affair from sowing small seeds; but even in their case much may be done shortly by sowing either in drills or broadcast, and covering with fine-riddled, dry soil. We have frequently found that seedlings come up strongly under this treatment. We save much refuse and dry soil from the potting-bench for this purpose. In such a spring one may be sure that the soil will contain enough of moisture to cause the seeds to germinate freely, and the dry covering prevents anything like rotteness. True, the covering may soon be wetted by heavy showers, but even then it will act very differently from a close covering with naturally wet soil. In the latter case the seeds are too apt to be shut-up, as in a case impervious to air, and the wet and want of air will cause them to swell and decay. In the former case the rains will pass through and plenty of air with them, and there will, consequently, be a free healthy vegetation. This is one of the great advantages of having a well-stirred, dryish seed bed. No rains that come afterwards will have a chance for a long time of making it water-logged, or rendering it hard and ungenial on the surface.

Globe Artichokes.—These who prize this vegetable, one of the very best for a conversational dinner, should make a point of planting some every year. Where there are strong plants it is an easy matter to slip off some good-sized pieces by the help of a sharp spade and pickaxe, and plant them 30 inches apart in rich leamy soil. These will yield heads from six to eight weeks after the older plants have produced. Even in the case of old plants, however, the season may be prolonged by cutting off the heads before they are old enough for what are called

soles or bottoms, and giving rich mulchings and manure waterings. By such a mode we have obtained successions from each set of leaves on the flower stems until the autumn. This method of preventing the maturation of old heads and giving nourishment to the roots is worthy of the attention of those who like the vegetable and yet can only afford space for a few stools. Of course, if they prefer bottoms or soles from older heads, they will not be able to get so many young heads for the table. It would be well if the fact, simple though it is, were thoroughly understood, that everything approaching the perfecting of seed-vessels greatly exhausts the vital energies of a plant. Three heads left large for bottoms on an Artichoke plant, will exhaust it more than a dozen and a half of heads cut when young to be sent as dishes to table. Where the extra care and extra manuring cannot be given, and yet a continuance is desirable, then the fresh planting of some ground every year is, perhaps, the simplest mode of attaining the desired object.

We have never seen much to admire in the *chards* of earthen-up Cardoons, or those resulting from earthing-up the leaf-stalks of the Globe Artichoke, if anything we prefer the latter; but if plants are devoted to that object a good number must be grown, as after the plants are thus blanched they are of little use afterwards. Several great cooks have told us that the heads used young for table are greatly improved by the plants receiving liberal treatment after the flower stalks appear.

Jerusalem Artichokes.—These have no connection but in name with the Globe Artichoke, in fact the plant is a Sunflower Potato, the tubers resembling Potatoes more than any other vegetable, and being relished by many as a dainty dish, and by many more as forming a chief part in a rich soup. In a very small garden lately we found fully one half of the vegetable department occupied with this tuber. The proprietor was not only very fond of it, but he told us that as most of his friends visited him in winter, the tuber was of great importance to him, as his friends never forget his delicious Artichoke soup. This plant, though holding its own when once established, yet to be made the most of, should be raised and planted every year like the Potato. The tubers then are of the same age—a matter of importance when they are used for dishes, though not of so much importance when used for soups. When planted the sets should be about 2 feet apart, and the rows 3 feet asunder. We have known a plantation last fifteen years, but when quality is required a little should be planted every year. We have never found the slightest difficulty in cultivated ground with this plant, but we have known some singular caprices when it was turned out to look after itself in a comparatively wild state. When otherwise not too much fed, pheasants will find it out, and partake of it with the gusto of an epicure. We have recommended it, seen it, and helped to introduce it into covers extensively, first as cover and then as food, but whilst in some places it has grown luxuriantly wherever it had light enough, in other cases where the soil was fair it almost refused to exist, and so far did not answer the purpose. In all exposed cultivated soil, whatever its nature, we have never known this tuber to fail. When a good boiled Potato is to be had we prefer it to the Artichoke, but there is something pleasing and rich in it, nevertheless. As to soup, that well made is like nectar, but then a clever cook could wash a number of pebble stones and make excellent soup if there were plenty of other wherewithals.

Rhubarb.—We transplanted a lot of ours, as it had been much injured by intruders. For this valuable plant the soil can scarcely be too deep nor too rich. We never yet knew a Rhubarb plant have enough of rich surface-mulching. All the best kinds may be raised from seed, and good produce obtained in two years. We depend chiefly on dividing and replanting what we force; and that, though it is little better—hardly so good as seedlings the first year, is fit to take up again after two summers.

We are glad to see that Rhubarb is now, more than ever, occupying a place in the smallest cottage gardens. In such cases, were we to offer our advice, it would be, Plant on a little knoll instead of sinking the plant too much; then collect and place round it any manure, house sweepings, even a few ashes; and as the Rhubarb begins to grow give a fair allowance of dish-washings, soap-suds, &c., so that the rich water may pass away and not lodge around the plants. For general purposes, as for pies, puddings, &c., in cottage families, we recommend the strong-growing kinds, as the Giant and the Victoria. One huge leafstalk 3 to 4 feet in length, and almost the girth of a man's wrist, would do for a fair-sized family, and the simplest way of using it is the best—cutting up without peeling off the skin, &c.; but stalks of the above size can only be obtained by high culture, we question if any soil would produce them naturally. Though pleasing to look at, we rather question the economy of these huge stalks; they contain more juice, and require, if it can be had, more sugar than smaller stalks, because the latter are firmer.

We believe that, when duly appreciated, Rhubarb will become more prominent as a preserve, and will make us more independent of Gooseberries and Currants. Now, some first-rate preservers in the way of jam and jelly have assured us that

firm stalks of small Rhubarb, such as Buck's Elford, &c., not larger in diameter than one's thumb, far surpass the huge stalks of the Victoria, &c., requiring much less boiling and much less sugar, weight for weight, and remaining much firmer afterwards.

Whilst on this point, though it is now somewhat unseasonable, we may say that when Rhubarb is to be preserved it should be slipped-off, not after wet, but after several days of bright sunny weather, as even that will make a great difference in the consistency of the plant and its freedom from extra moisture. We have lately alluded to some of the simplest modes of forcing this vegetable in winter and early spring.

Sea-kale.—After hardening it off we commenced planting out that which we have used for forcing, placing the crowns in one row, and cut pieces of the roots in another. We prefer pieces of the roots to young seedlings, if we can get them 6 inches long, and from a quarter to half an inch in diameter. The top end soon forms buds when planted, and all that is wanted is to thin the buds. Anyone who has a small garden and a kitchen may enjoy this delicious vegetable in the winter months. Some of the best Rhubarb we have seen in January was in an old barrel in a kitchen. The bottom of the barrel was tolerably watertight, but a good watering before introducing the barrel to the kitchen was nearly all that was required. Such Rhubarb, grown even in the dark, was more tender, and though not so firm, required less sugar, than that grown in the open air. We have no fear of the effeminating or lowering influence of a taste for such little luxuries. We have great faith in everything, however seemingly trivial, that concentrates the feelings of a man in his home and family.

FRUIT DEPARTMENT.

We must proceed with out-door work, as we are much behind-hand with it. There have been great complaints of early *Peaches* not setting well, partly owing to the dark weather, partly to exciting them too much with heat when there was no counterbalancing influence from the sun, partly to the buds being imperfectly matured last autumn, partly to thickets of bloom being left to open when less than half the quantity would have had a better chance, partly to the roots being too dry, and partly to the roots being surrounded with stagnant water. It is often very difficult to decide on the true cause in such matters without careful attention and strict examination. Some years ago we had a fine tree that showed abundance of bloom, but on examining it closely there were hardly a score of flowers in which there were perfect pistils. We attributed the failure to an over-heavy crop the previous year, and imperfectly ripened wood. The following year, and afterwards, there was no repetition of the evil. In several cases the blooms have fallen in consequence of too much dryness at the roots, and mere surface appearances should not be depended on. A somewhat dry atmosphere is also a great help in setting the bloom. When set, evaporating-pans containing soot water will be very useful; the slight fumes from the soot will assist in keeping insects away. A pint of sulphur and soft-soap water daubed on open spaces of the wall wherever the sun will strike, will also help to keep away the red spider, and precaution in all such cases is better than cure.

Vineries.—As we have not commenced forcing so early this season, we have just kept the Vines moving gently. Outside borders should be carefully covered where the forcing has been early. For later houses now, if the borders are well drained, such coverings will be little required.

Strawberries in bloom will be all the better of having a dry hand or a bunch of fine feathers drawn through them. Those coming on and showing the flower-trusses should be carefully watered. As yet avoid watering the centre of the plant or bud. Better sail the pot from a small watering-pot with a spout rather than a rose; and again, if saucers are used, which they must be in some cases, allow no water to remain in the saucer. When these little matters are not attended to, the centre of the plant, even after it shows, will often be destroyed by a sort of damping gangrene. It requires time and labour to obtain good plants in pots, and a little attention afterwards is anything but labour lost.

ORNAMENTAL DEPARTMENT.

As a proof of what the sun will now do, we had a down-pouring on the 7th up to midday, such as no workmen could stand unless thoroughly waterproofed; we had showers, too, on the 8th; but the gleams of sun and the wind were so drying, that we were able not only to sweep and roll lawns, but also to sweep and pull the back of a rake over walks, and roll them, too, in the after part of the day. Heavy rain, it is true, is falling on the evening of the 8th, but the walks will not only look clean but be all the firmer and drier owing to the rolling, as the heavy rains will pass at once to the sides from the firm surface. We know that walks can be made pretty and waterproof too; but taking the year through, and the comfort of the feet in walking, we question if anything on the whole is better than a somewhat smooth, firm gravel walk.

We prepared hotheds of a slight nature for sowing seeds and propagating by cuttings. Reported *Fuchsias* and *Begonias*, and put *Poinsettias* into a state of rest when done blooming, giving

those remaining plenty of water, and little or none to those finished. Brought some *Euphorbia jaquiniellora* into heat a second time, as from these, though the wreaths will be small, the sprigs of bright flowers will be useful for cutting. Watered carefully according to the weather; and as the air is moist, kept plant houses dry rather than slopped with water.—R. F.

TRADE CATALOGUES RECEIVED.

James Dickson & Sons, 103, Eastgate Street, and Newton Nurseries, Chester.—*Catalogue of Farm Seeds, Implements, &c.*

Harrison & Sons, Leicester.—*Seed Catalogue, with Hints on Cultivation.*

Alfred Legerton, 5, Aldgate, London, E.—*Trade Catalogue of Garden, Agricultural, and Flower Seeds.*

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

INTERNATIONAL EXHIBITION (U. S.).—Apply by letter to the Secretary, Kensington Gore.

MALE AUCUBA (*Kittie*).—You are right. The plant bearing berries is a female plant. Apply for a male plant to any of the principal nurserymen who avertise in our columns.

PYRAMID ROSE TREE (*A Reader*).—It should be trained from one stem.

RHODODENDRONS (*D. W. G.*).—Any of the nurserymen who specially advertise in this Journal can supply you.

HOLLYHOCK FLOWERING SAME SEASON AS SOWN (*A. I. M.*).—The plants from seed sown at this season will not flower this year, or not until very late, and they will not be at all in character. Sow the seed now in shallow pans, and place them in a gentle heat, as that of a hotbed. The seedlings will, however, thrive in a greenhouse. When they can be handled easily prick off the seedlings in pans or boxes, about 3 inches apart, and keep them in the greenhouse or a cold frame, planting-out 2 feet apart in good rich soil in an open situation, but sheltered from cold and high winds. When they flower mark the best, then cut them down, and plant where they are to flower another season. Those with a single or badly-formed flower throw away.

CUTTING-DOWN PASSION-FLOWER (*Idem*).—It is good practice to cut-back the Passion-Flower if it has become bare of shoots at the bottom, otherwise it will be sufficient to cut the side shoots where too thick, to within two eyes of the main stems. We should not report the plant until it had made shoots a few inches long, then reduce the ball considerably, and pot in the same size of pot.

TROPEOLUM TRICOLORUM TYPER SHOOTLESS (*O. O.*).—We think, as the shoot was rubbed-off two years ago, a fresh one will not now be produced. We should keep it another year, and if it do not form a new shoot by next September throw it away. It is remarkable it should keep so long sound without making fresh growth.

POINSETTIAS AFTER FLOWERING (*A Beginner*).—Keep the plants dry until the end of this month, then cut-back each growth of last year to within half an inch of its base, or to two eyes. Keep the plants rather dry until the fresh shoots are 2 inches long, then turn the plants out of the pots, remove all the soil coming away freely from the roots, and repot in the same size of pot, using a compost of two parts light fibrous loam, one part each sandy peat and leaf soil, and a sixth of silver sand. Stopping the shoots may be practised, but not after July.

DOUBLE PRIMULAS AFTER FLOWERING (*Idem*).—Continue them in the greenhouse up to May, and then they may be placed in a cold pit or frame, and kept there throughout the summer, housing in September. You may divide them next month or early in May, repotting the plants then, and again in August.

ARALIA JAPONICA—DOUBLE GERANIUM LEAVES BROWNED (*A Constant Subscriber*).—The leaf you sent is that of *Aralia japonica*, a half-hardy shrub, requiring protection in a cool greenhouse in winter. In summer it may be placed out of doors. It succeeds well in a compost of two parts fibrous loam and one part each leaf soil and sandy peat. The double Geranium leaves you sent us are suffering from what is known to gardeners as the "spot," which in your case arises from a check owing to exposure to a cold current of air. The roots, we should say, are not very active. Repot the plant and afford a more uniformly moist atmosphere, with moderate air-giving in such weather as we have lately experienced. The leaves will improve as the season advances.

CONSERVATORY DOUBLE COMPOST (*J. H.*).—The plants you name require somewhat different composts. Could you not divide the border into compartments, and so give each plant the soil required? A difference of treatment is quite as much required in respect to watering as in soil. The dividing walls need not be more than 4 inches thick, and for neatness may have a dressed stone coping with the edges chamfered. Your concrete arrangement is good, also drains, but they should be covered with not less than 6 inches of rubble for drainage, and the soil should not be less than 2 feet deep. We

should have it 2 feet 6 inches deep. The *Araucarias* require good friable loam, neither strong nor light, and if turf be used it must be chopped up. You may add one-fourth of leaf soil. This will also suit the *Musas*, but we should add to it one part of well-rotted manure to four of the loam, a sixth part of half-inch bones, and a sixth of sharp sand well mixed. The *Camellias* should have a border formed of the top inch of a pasture pared off where the soil is sandy, and there should be added to it one-fourth of leaf soil and a like proportion of fibrous sandy peat, with a sixth of sharp sand, the whole chopped up and well mixed. This will also grow *Acacias* and *Bougainvilleas*. *Grevilleas* should have equal parts of peat and sandy loam, with a sixth part of sand and an eighth of charcoal in lumps between the sizes of peas and walnuts. *Dracenas* will do in the soil advised for *Camellias*, also *Arata* and *Ricinus*, and the *Palms* in the compost named for *Camellias*, increasing the proportion of the peat to that of the loam. The *Alsophila* should have a compost of two parts fibrous sandy peat, one part fibrous loam, half a part leaf soil, and a sixth of sand. Of these you name, all will succeed in a conservatory kept at a temperature in winter of 40° to 45°, which they require. Exceptions are *Musa Cavendishii*, *Alsophila contaminans*, *Calamus*, and *Lantana borbonica*—these require a stove.

WIREWORMS (*T. H.*).—You are entirely in error in concluding that wireworms feed only on decayed or decaying matter. They feed on the live roots of plants—for instance, those of the *Pink*, *Lansy*, *Carnation*, and *Lettuce*; but we have no evidence of their feeding on the roots of ligneous plants. We have known nearly every plant of *Lettuce* destroyed by wireworms on a newly formed Peach border, and yet the Peach-tree roots were not interfered with, at least the Peach trees succeeded admirably. Like remarks apply to Vines. We have known Vine borders formed of turf much infested with wireworm, yet the Vines did not experience any injury, and we do not think any evil will result in your case. We also think you mistake in attributing the wireworms to the dung applied to the border as a dressing. The wireworms, we should consider, had escaped from the soil of the border: towards spring they come very near the surface. We would cut some Carrots into pieces about 2 inches long, and place them in holes about 2 inches below the surface, a pointed stick being thrust into each piece, and the pieces of Carrot examined every day for a week, then every alternate day. If this be persisted in, and the baits replaced in the soil after each examination, you will soon thin their numbers. Renew the baits when necessary.

GRAPES FOR COOL CONSERVATORY (*K.*).—There is no black Grape equal to the Black Hamburgh for a cool conservatory, and if you wish to grow the Grapes for profit we would plant it all with that variety. Black Prince would do for variety; and the most certain to succeed amongst white sorts is the Royal Muscadine.

STRAWBERRY PLANTS IN VINERY (*Idem*).—It is not desirable very early in the season to take Strawberry pots all at once from a cold house into a night temperature of 60°. The night temperature should not be above 45° or 50° at first, but may be gradually increased to 60° in the course of three weeks. So late as the second week in March they might be placed in a temperature of 60° without injuring the plants, but in all probability they will be infested with red spider before the fruit is ripe.

PEACH TREE NOT SETTING ITS BLOSSOM (*Idem*).—Dryness at the root, or a close humid atmosphere, would cause the blossom to drop without setting. When Peach trees are in flower the atmosphere of the house should be kept rather dry. Ventilate freely by day, admit a little air at the ventilators all night, and in dull cold weather apply artificial heat to the house.

TEMPERATURE IN GREENHOUSE (*Gera*).—For a greenhouse the temperature at night at this season should be 45°, on cold nights it may fall to 40°. From fire heat the temperature day and night should not exceed 50°. The nearer it is kept to 45° the more suitable it will be for flowering plants. It is not possible to tell how often plants should be watered. They should be examined every day, those with the soil dry should be watered before the leaves flag. Plants in flower will need watering every day, but if the weather is dull they will only need watering every second or third day.

CHARCOAL FOR PINKS (*M. E. H.*).—It is excellent for Pinks if broken-up rather small and mixed with the soil either for planting in the open ground or potting. It may be given advantageously to plants already planted out, covering the ground about the plants half an inch thick, and pointing-in with a fork. It may also be spread on the ground before planting, pointed-in with a fork, and mixed well with the soil. Charcoal is a good manure, and is useful as a preventive to the attacks of grubs.

BRUGMANSIA COMPOST (*H. B. V.*).—Use two parts of light fibrous loam, one part leaf soil, half a part thoroughly-decayed manure, and a sixth part of sharp sand. Drain the pots well, and repot the plants now, removing most of the old soil, and when the shoots are a few inches long shift into a larger-sized pot. Water abundantly after the flowers show, and at every alternate watering use 1 oz. of guano to a gallon of water. Assign the plants a light and airy position in a greenhouse, and syringe frequently to keep down red spider.

SNOW SIFTLING (*Annie*).—There is no difficulty in accounting for snow keeping plants from excessive cold. It prevents heat radiating from them, protects them from the chilling blasts, and is one of the worst conductors of heat. We have never known the surface of the earth below a covering of snow colder than 32°, even when the temperature of the air above has been 25°. So well known is the fact that the poets have recorded it. Thus one says, "Asleep the snow—"

"Every patch of bare brown mould,
Every stone lies under your fold,
And all the flowers you carefully hold
Hidden away from the winter's cold."

PEACH BLOSSOMS FALLING (*B. G.*).—The blooms of the Peach trees were too withered to enable us to give a confident opinion, but we think with you there is something abnormal in their appearance, being so small at their base. We can only hint that the heavy crop the tree bore last year, or an excess of or too little moisture at the roots, may be the cause of the falling of the blooms of one tree whilst the other stands so well. Three years ago we had a small tree that showed similar symptoms, and everything seemed right so far as the surface was concerned, but on digging down with a pointed stick we found the soil and roots were dry 3 inches beneath the surface. A marshy soil holding water would have a similar effect in the dull weather we have had. These, however, are merely hints, for we really know not the cause in your case.

MANETTI STOCKS (*Herbert*).—The Manetti stocks you have had sent you we should plant 1 foot apart in rows 2 feet from each other. We should plant them as deeply as they were before, examining them for suckers before plant-

ing, and removing those or any eyes below the surface or planting part. Cut them down to within 8 inches of the ground, and bud them in July or August on the stem at 2 or 3 inches from the ground. The stocks are not suitable for standards.

BRUSSELS SPROUTS (Timbury).—We should decidedly object to taking off the side leaves of Brussels Sprouts as long as they remain green. When they turn yellowish it is a different affair. To hasten free sprouting early, we often nip out the centre of the top.

SOWING PHLOX DRUMMONDI (Young Gardener).—Sow the seed between the present time and the early part of April in a pot or pan filled to within a quarter of an inch of the rim with light rich soil; scatter the seed evenly, and cover it with fine soil the eighth of an inch thick. Place the pot in a gentle hothed, and keep it moist and near the glass. When the plants have a pair of rough leaves prick them out an inch apart in pans of light rich soil, and return them to the hothed, keeping them rather close and shaded from bright sun until established; then admit air freely, harden off, and plant out after the middle of May in rich soil in the open ground. A good time to sow Melons is early in April. The plants will be fit to plant out early in May, and with a moderate hothed will ripen fruit in August.

FRUIT TREES NOT BEARING (J. Lumby).—Your trees receive far too liberal treatment. Giving them plenty of manure, and watering freely with liquid manure when in flower, will certainly cause a strong growth; blossom buds will be few, and they do not, as a rule, set freely on such trees. You did right to add clay to your sandy soil. Do not give any manure except as a mulching during hot dry weather in summer; a good soaking of water might be beneficial at that time. It would also be desirable to stop the vigorous shoots during summer, and cause them to break again. Summer pruning will induce fruitfulness.

VINES UNFRUITFUL (Amateur).—If your Vines were over-cropped last year that would be a sufficient reason for very few bunches showing this season, otherwise over-dryness at the roots might be the cause. When the roots are all inside, Vines require a very large quantity of water. You could ascertain the state of the roots by digging down a foot or more with a small fork. We give an inside Vine border, 25 feet long by 16 feet wide, from 250 to 300 gallons at each watering, but we only give four or five waterings during the season. The borders are damped over the surface every day as well. We can only say to you, Water the roots thoroughly, do not overcrowd the roof with young wood, so that the latter may be thoroughly ripened, and do not over-crop.

INSECTS (W. G.).—The grubs found at the roots of your pot Vines are the larvae of the destructive *Otiorynchus* recently figured in our account of the large tubercles on Vines. The earth must be carefully sifted, and the grubs picked out. (*R. C.*)—Your *Echeveria* has had the centre of the short stem gnawed into by the grub or larva of the *Otiorynchus* weevil. We know of no other remedy for the mischief at this stage than to hunt for the grubs carefully, sift the earth, and destroy them.—I. O. W.

NAME OF FRUIT (Centurion).—Your Pear is undoubtedly *Beurre d'Armen* borg.

POULTRY, BEE, AND PIGEON CHRONICLE.

AN OLD GAME COCK TO THE RESCUE.

In common with the rest of my race I entertain the greatest reverence and respect both for Mr. Wright and his writings. We regard him as a lover of our species, an accomplished exposé of the abuses and indignities to which we are daily exposed, a true friend and benefactor to each and all of us when and wherever disinterested friendship is most urgently required. Hence any eulogium made by him passes current amongst us, and we regard with some little jealousy anything he may have to say of or concerning any member of our family. In a recent number he writes, "After all that has been said regarding the change of style, or the difference between the old fighting and the modern exhibition birds, the breeders, the public, and judges have given unmistakable preference to the high-bred, graceful, fine-boned modern style." At every word of this sentence each particular feather in my backle rises. I challenge with all the fierceness of former days, and hurl back with undisguised indignation a slur of so gross and unjustifiable a character. We come of a right royal race whose spotless lineage has been handed down through the dim vista of succeeding generations; kings and commoners alike have watched with jealous rivalry that no stain, no mongrel cross should ever tend to mar or blot our family escutcheon, and our stud-book has been religiously kept by the noblest in the land, with as much care as ever was bestowed on the pedigree of a West Australian, a Cerito, or a Bedlamite. I would therefore simply ask Mr. Wright to point out wherein consists the superiority of the so-called modern Game fowl. With that quiet dignity which has been one of the chief characteristics of our noble race, I refrain from committing myself by calling the fashionably bred mongrel that now usurps our titles, a harsh or unkind name; neither would I do my friends the true bred Malay that violence to associate their name with these usurpers—I simply seek to contrast these pets of Mr. Wright with ourselves and our ancestors, and to ask in what their superiority consists. "High-bred"! "graceful"! "fine-boned"! Pshaw! Ask those who have bred and loved us for the last fifty years, were we not pure? Were we not courageous? Were we not fine in bone? Were we not equal in colour, and as perfect in feather? "High-bred"! Are not the cup birds of the present day three parts Malay? How can they be termed English Game fowls? Why do the committees of our shows state in their prospectuses that purity of race will be considered in a greater degree than size or weight, whilst they seek to

promote and propagate the development of mongrels? Why do not our judges, many of whom used to love "a good bird in the hand" disqualify all such pens, and with a true spirit of conservatism seek to maintain our English Game fowl in its native purity? Will the judges use the responsibility of this usurpation? (and it is in their power to check if not to prevent it). If it is desirable to propagate cross-breeds do so by all means, but do not offer prizes for "pure bred Game fowls," and apportion them to mongrels. Our friends the Malays are obtaining, I trust, their proper class and position; why shall not the same be accorded to the English Game! Do not insult us by making a new class for us, neither ask us to compete with a race called into notoriety by the morbid taste of a few; simply give us a fair field and no favour, and we shall then, as now, stick to our motto, *Vincere vel mori*. I should not, sir, have dared to crow so long, but the dander of the old Black Red was fairly rizzed when Mr. Wright sought to sully the purity of our race, the elegance of our form, and the fineness of our bone and breeding.—OLD BLACK RED.

EXHIBITION LABELS.

SECRETARIES of poultry shows ought to provide good labels. The cost of good labels is not high, therefore why have poor ones, which one cannot write upon, and through which the ink comes? There is generally a rule in prize schedules requesting exhibitors to write their names distinctly. How can they on such poor labels as are very often sent? The labels sent for the Show at Northampton were absolutely rubbish (begging their maker's pardon), and I was obliged to fasten another label to mine to ensure the safe return of my birds. This is not the first time I have had to do so, but I hope after this it may be the last.—AN EXHIBITOR.

THE THIRD PRIZE IN THE FANCY DUCK CLASS AT THE HANLEY SHOW.

THERE can be no doubt that the third prize was awarded to the only pen of Carolina Ducks exhibited at the Hanley Show, and that pen belonged to Mr. Elmes Watts, of Hazlewell Hall. There is no doubt of this, because the Judges, Messrs. Martin and Douglas, so state; yet it was printed and published that the third prize was awarded to someone else's Black East Indian Ducks. We recommended Mr. Watts to adopt legal proceedings, and he has since received the following letter from the Secretary:—"I have written to Mr. Martin and have had a reply; and as there seems to be something we cannot get to the bottom of, we have agreed to send you the amount of the prize (5s.), which I have enclosed."

One of the Judges—Mr. Douglas—wrote as follows to Mr. Watts:—"The third prize was given to a pair of Carolinas. They are doing something very wrong over this Show. I have a letter from Mr. Fletcher, from whom they withhold an extra prize that we gave his Game cock, stating we gave it to another pen—in fact a pen that was not worth 1s., except to kill."

NORTHAMPTON POULTRY AND PIGEON SHOW.

Few, if any, shows of a like description have proved so popular as that held at Northampton. At the commencement of its career, some four years back, there was exhibited a very small but excellent collection. Every succeeding show has about doubled the number of entries of its predecessor, so that last week nearly 1400 exhibits were on view. This result is due to the unflagging energy displayed by the Committee generally, combined with the exceedingly courteous and business-like manner in which the correspondence necessary in such undertakings is carried on by the Honorary Secretary. The attendance of visitors was of the most satisfactory character. It is right to mention that, irrespective of poultry and Pigeons, a large number of Cats competed for prizes, and in respect to the Rabbits, the entry was far greater than has been known at any show in the kingdom. If progression is to go on at the same rate as hitherto, it will become a matter of some anxiety to the managers to find accommodation, for even at the present time the Pigeons, as a whole, and a large portion of the Bantams, were from compulsion arranged quite too high for general inspection. We are informed, on good authority, that the Committee feel quite alive to such a contingency, and purpose another year to so arrange matters that the judging shall not be carried on during the presence of so dense a crowd of interested exhibitors as marked this year's proceedings. That the original expectations of the Committee have been marvellously exceeded is certain, whilst the determination to even yet extend the value of the premiums offered, evinces a desire to insure for the Northampton Show a position among the most important of such exhibitions. When it is borne in mind that most amateurs have now mated their best birds for breeding purposes, it is really surprising that the quality and general excellence of most of the classes would bear favourable comparison with the

majority of even our winter shows; yet so it was, and the attention paid to the valuable specimens collected erred rather on the side of prodigality than neglect. It is necessary to note that in almost all instances the poultry classes were for single birds, consequently not only were very few pens empty, but the birds were such as really were entered in the hope of winning, and not for the purpose of changing owners.

The *Dorkings* were grand classes, a perfect treat throughout to any fancier, the hens especially proving a very excellent, well-filled, and even class throughout. As regards the *Cochin* classes, perhaps this Show contained one of the best collections ever exhibited, the Buff and White ones more especially. The *Cochins* of the two latter varieties were remarkable for comprising specimens not yet a year old of unusual promise, whilst the majority of the old hens, both White and Buff-coloured, were such as, once seen, could not easily be forgotten. In the *Brahma* classes were some considerable numbers of first-class specimens; and in the class for any variety of *French Fowls* a most excellent La Flèche cock took precedence, the more creditable as being so unusual of late years. *Spanish* fowls very far exceeded the entries generally met with in the past season, the quality of the winning birds being of first-rate character. A few exceedingly good *Game* fowls were to be found in large classes, but most probably from the changeable character of the weather the greater portion were shown in very soft feather. *Hamburghs*, more particularly the Spangled varieties, were such as could not be surpassed at even the northern shows, and the Variety classes were exceptionally good. In the Selling classes the entries were much more intrinsically valuable than ordinary; in short, there was scarcely a pen not worth the money, and in some instances manifold the sums at which they were entered; this feature entailed plenty of business in the sale-room.

The competition of Aylesbury and Rouen *Ducks* in the same class is a matter that offers a royal road for improvement another season; both varieties were unusually fine. In Fancy Waterfowls, the exhibition of single specimens, "either drake or Duck," is quite a mistake, and several entries of pairs of birds in this class had to be passed for non-compliance with a rule that would be more honoured by the breach than the observance, for the simple reason that pairs of these lovely Waterfowls, if only temporarily divided, are apt to cease feeding, become restless and uneasy, and oftentimes in a few days pine away beyond the power of restoration, even in the most careful hands. *Game Bantams*, besides being placed quite too high for general observation, were not equal to what might have been fairly expected; the Black, Pekin, and a few really Silver-laced Sebrights were on the contrary excellent.

Of *Pigeons* the Show numbered three hundred entries, and most of these classes were of the highest order, Pouters, Carriers, Dragoons, and Owls being, perhaps, the most noteworthy among them.

We were glad to hear that scarcely a case of trimming occurred, the punishment of disqualification that has recently been stringently enforced apparently having at length told in favour of the honourable competitor. The *Cats* and *Rabbits*, a most conspicuous portion of the Show, were evidently attractive to many visitors, particularly the former, among which were certainly some of the finest and best-cared-for specimens it has been our lot to witness.

The poultry Judges were Messrs. Hewitt and Teebay; for Pigeons, Messrs. Tegetmeier and Allsop; and for Rabbits, Mr. Rayson. For the latter, on account of the number of entries, Mr. Johnson was appointed a second Judge, the appointment being regulated by the votes of the exhibitors.

PIGEONS.

The *Pouters* were good; in the cock class Whites were first and third, and Blue second; White being first and second, and Blue third in the hen class. *Carrier* cocks were far superior to the hens; Duns were first, Black second and third; and the winning hens were Black first and third, Duns second. The young Carrier class was very good and strong; Black, Blue, and Dun being the prizewinners respectively. In the *Darb* class a Black hen was first; a Yellow cock and Black were second and third. *Tumblers*—Short-faced Almond won all the three prizes. In the class for Any other variety of Tumblers Black Baldheads were first, Yellow Mottles second, and Blue Beards third. Foreign *Owls* were good. White, Black, and Blue were prizewinners respectively. English *Owls* were a poor lot, though strong in numbers; Blue being first and third; White second. *Turbits* were a good and strong class. Blue, Red, and Yellow were the winners in the order named. In the *Jacobin* class Reds won all the prizes.

Fantails were good, Whites being first and third; Blue second. *Dragons* were a good and strong class of thirty-one entries; Blue first, Yellow second, and Brown-barred Silver third. *Antwerps* mustered twenty-two entries. Silver Dun, Red-chequer, and Blue-chequer were the winners. Although a strong class, they were not so good in quality as they might be. Any other variety not before named contained specimens of almost all

known breeds that had not a class assigned to them previously. Black Trumpeters (new type) were first; Blondinette and Sabinette second and third.

In the *Selling Class* for single birds, price not to exceed 30s., were forty-six entries; Blue Pouters, Black Carriers, and Black Parbs being the winners. In the Selling class for pairs of birds, price not to exceed 40s., White Pouters, Dun Carriers, and Red Jacobins carried off the prizes. This class had twenty-six entries. In the Selling class, price not to exceed £5, a remarkable good pair of Black Carriers were first; White Pouters second; Dun Carriers third. In the Local class were Carriers first, and Blue Pouters second and third.

The entries altogether were 336 pens, divided into twenty classes, with three prizes in each class; in addition to which there were eight silver cups, five of the value of £3 3s., the remainder £2 2s. each, so this is conclusive proof that the strength of the fancy will always show where there is something to win. Owing to the large entry of fowls, the Pigeons had to be placed on the top of two tiers of fowls' pens, which made it very difficult for visitors to see them. In addition we would advise the Committee to make a three-days show, and have all judged by two o'clock on the first day, and then admit the public; as it is, it is very tiresome and unpleasant for judges to have to thread their way among visitors whilst making their awards.

DORKINGS.—Cock.—1, J. Stott, Healey, Rochdale. 2, F. Parlett, Great Baddow. 3, J. Longland, Greadoia, Northampton. *hc*, Hon. J. Massy, Limerick; J. H. Ivimey, Long Sutton; R. W. Richardson, Meaux Abbey, Beverley. *c*, J. Longland; W. Evans, Proscot.

DORKINGS.—Hen.—1 and Cup, H. Lingwood, Needham Market. 2, Hon. J. Massy. 3, J. Watts, King's Heath, Birmingham. *hc*, Hon. J. Massy; E. Smith, Timperley (2); O. E. Cresswell, Early Wood, Bagshot (2); F. Parlett; R. W. Richardson.

COCHIN-CHINA (Cinnamon or Buff).—Cock.—1 and 3, Henry Lingwood. 2, Mrs. Allsop, Hindlip Hall, Worcester. *hc*, T. F. Ansell, Cowley Mount, St. Helen's; J. Bloodworth, Cheltenham; S. R. Harris, Casgarie, St. Day; H. Lloyd, jun., Handsworth. *c*, J. N. Beasley, Northampton; H. B. Smith, Broughton, Preston.

COCHIN-CHINA (Cinnamon or Buff).—Hen.—1 and Cup, G. H. Procter, Durham. 2 and *hc*, H. Tomlinson, Gravelly Hill, Birmingham. 3, H. Lloyd, jun. *hc*, W. A. Burnell (2); J. F. Ansell (2); J. Bloodworth; Mrs. R. Harris. *c*, J. N. Beasley, Southwell, Notts; W. A. Burnell; J. Watts; S. Sambrooke, Chipping Campden; Rev. C. H. Crosse, Cambridge.

COCHIN-CHINA (Partridge or Black).—Cock.—1, T. Stretch, Ormskirk. 2, T. Aspdon, Church. 3, W. W. Ranton, Healey, Sheffield. *hc*, Mrs. Allsop; J. K. Fowler, Aylesbury (Partridge); E. Tudman, Whitechurch, Salop. *c*, H. Frankland, Church.

COCHIN-CHINA (Partridge or Black).—Hen.—1, Cup, and *c*, E. Tudman, Salop. 2, Capt. F. G. Coleridge, Wargrave. 3, A. Darby, Bridgnorth. *hc*, Rev. R. L. Story, Wensley, Bedale; B. S. Lowndes, story, Stratford; C. Howard, Peckham. W. Badger, Bridgnorth; G. Holt, Church.

COCHIN-CHINA (White).—Cock.—1, R. S. S. Woodgate, Pembury, Tunbridge Wells. 2, W. Whitworth, jun., Longsight, Manchester. 3, Sir S. Lakeman, Ipswich. *hc*, J. H. Nicholls, Lostwithiel; R. S. S. Woodgate (2).

COCHIN-CHINA (White).—Hen.—1, Cup, and 3, R. S. S. Woodgate. 2, G. H. Procter. *hc*, W. A. Burnell; H. Vaughan, Wolverhampton; R. S. S. Woodgate. *c*, J. H. Nicholls; C. Bloodworth.

BRAMA POOTRA (Light).—Cock.—1, Rev. N. J. Ridley. 2, Miss M. E. Eyton, Wellington. 3, J. Bloodworth. *c*, J. T. Hinks, Hummerstone, Leicester.

BRAMA POOTRA (Light).—Hen.—1, J. K. Rodbard. 2, J. Bloodworth. 3, J. T. Hinks. *hc*, J. Mere, Rothwell; M. Leno, Markyate Street; — Sambrooke; *c*, Miss M. E. Eyton.

BRAMA POOTRA (Dark).—Cock.—1 and 3, Horace Lingwood, Creeling. 2, T. F. Ansell. *hc*, Rev. J. G. B. Night, Danbury, Chelmsford; T. F. Ansell; Rev. J. H. Chubb, 1, E. Leaton, Ampthill. *c*, Lady Bolton, Bedale.

BRAMA POOTRA (Dark).—Hen.—1, Cup, and 3, T. F. Ansell. 2, Horace Lingwood, Creeling. *hc*, Rev. E. J. Birch, Overstone, Northampton; T. F. Ansell; Rev. J. D. Peake, Laleham; C. Howard; Horace Lingwood.

FRENCH.—Cock.—1, Rev. N. J. Ridley, Hollington Vicarage, Newbury. 2, W. Dring, Faversham. 3, J. Cross. *hc*, J. K. Fowler. *c*, Lady Bolton; J. Walton, Crofton; Rev. T. C. Beasley, Saffron Walden.

FRENCH.—Hen.—1, E. Leaton, Ampthill. 2, J. K. Fowler. 3, W. Dring. *hc*, H. J. Bailey, Tenbury. *c*, R. Burrows, Crofton; Rev. T. C. Beasley.

SPANISH.—Cock.—1 and Cup, J. Boulton, Bristol. 2, C. Howard. 3, W. R. Bull, Newport Pagnell. *hc*, E. Brown, Sheffield. *c*, J. Hodgson, Bristol.

SPANISH.—Hen.—1, J. Nash, Walsall. 2, T. Bash, Bristol. 3, E. Brown. *hc*, Mrs. Allsop; J. Boulton; J. Parker, Northampton; H. J. Bailey. *c*, W. R. Bull.

GAME (Black-breasted Red).—Cock.—1 and Cup, S. Matthew, Stowmarket. 2, J. Mason, St. John's, Worcester. 3, E. Winwood, Worcester.

GAME (Black-breasted Red).—Hen.—1, J. Nelson, Hexham. 2, P. Bullock, Bilston. 3, Capt. C. P. Terry, Walton-on-Thames.

GAME (Any other colour).—Cock.—1 and Cup, J. Chester, Nantwich. 2, H. E. Martin, Southorpe, Fakenham. 3, F. Sales, Crowle (Duckwing). *hc*, S. Matthew (Brown Red). *c*, E. Winwood; W. Watson; P. Bullock (2); J. Chester. Nantwich. *c*, B. Cox, Moulton; H. M. Julian, Hull; W. Dunnig, Newport, Salop.

GAME (Any other colour).—Hen.—1 and 2, P. Bullock. 3, T. Love, Kiags-thorpe, Northampton. *hc*, B. Mollett, Balham (Duckwing). *c*, E. Winwood.

HAMBURGERS (Golden or Silver-spangled).—Cock.—2, J. Robinson, Garstang. 3, J. Howe, Denton. *hc*, L. Wren, Lowestoft; T. Love; J. Robinson; N. Marlow, Denton; G. J. Duckworth, Church.

HAMBURGERS (Golden or Silver-spangled).—Hen.—1, Cup, and *c*, J. Robinson, Garstang. 2, T. Love. 3, J. Clark. *hc*, P. Hanson, Eastington, Stonehouse, Plymouth; W. K. Patrick (Poland); W. H. Tomlinson (Black Hamburgh); Miss Mill, Ackmansworth (White Leghorn); — Crutenden (Poland). *c*, Rev. N. J. Ridley (Malay); Capt. C. F. Terry (Malay).

HAMBURGERS (Golden or Silver-pencilled).—Cock.—1, G. J. Duckworth. 2, J. Robinson. 3, — Speakman, Nantwich. *hc*, R. H. Ashton, Mottram. *c*, T. Wild, jun., Melton Mowbray; H. & A. Gill, Rawtenstall.

HAMBURGERS (Golden or Silver-pencilled).—Hen.—1, J. Robinson. 2, W. Chalmers, Halburton, Conpar Angus. 3, E. Norton.

ANY OTHER VARIETY.—Cock.—1, — Crutenden, Brighton (Poland). 2, H. Frankland (Cuckoo Cochins). 3, S. R. Harris (Black Munroe). *hc*, H. Allen, Wood Green (Cuckoo Dorking); Capt. F. G. Coleridge (Golden Poland); W. K. Patrick, West Wynch, Lynn (Poland) (2); Stott & Booth (Black Hamburgh); T. Bush.

ANY OTHER VARIETY.—Hen.—1, W. K. Patrick (Poland). 2, G. Holt (Cuckoo Cochins). 3, T. Bush (Black Hamburgh). *hc*, Capt. F. G. Coleridge (Golden Poland); W. K. Patrick (Poland); W. H. Tomlinson (Black Hamburgh); Miss Mill, Ackmansworth (White Leghorn); — Crutenden (Poland). *c*, Rev. N. J. Ridley (Malay); Capt. C. F. Terry (Malay).

SELLING CLASS.—Cock.—1, J. Longland (Dorking). 2, W. K. Patrick (Poland). 3, H. Yardley, Birmingham. *hc*, T. F. Ansell (Dark Brahma); W. W. Cumick, Llaifae (Dark Brahma); W. Stevens, Northampton (Buff Cochins);

and if such a charge be proved, all the prizes taken by the same exhibitor will be forfeited for the good of the Society, and the exhibitor's name published in the reports of the Show. The Committee hope and trust that exhibitors will render their assistance in carrying out this rule."

I think a rule such as the above should appear in all prize lists; but until it do, amateurs will not have a fair chance, as the practice of borrowing is very common now-a-days.—AN AMATEUR.

LIMITING THE VALUE OF EXHIBITED PIGEONS AT DUBLIN.

I wish to draw the attention of your readers to a very gross proceeding to be carried out at the spring Show of the Royal Dublin Society. The poultry exhibited at these Shows for some years have been of a very good class, and since the addition of the Pigeon classes, a few years since, the number of entries and value of the birds exhibited have increased every year, and the Pigeon department has of late been the great attraction of the Show.

This year the Committee have given a very liberal sum of money to be distributed in poultry and Pigeon prizes, but unfortunately they have placed the framing of the rules and distribution of the money under the decision of some incompetent one. I wish to remark that as far as the Committee are concerned, they are gentlemen who are beyond even the suspicion of countenancing anything unfair, and when the matter is put in its proper light before them, as I intend to do, I have no doubt they will at once repudiate the idea of benefiting a few local (Dublin) individuals who are half dealers half amateurs, and to the exclusion of gentlemen who have for years forwarded poultry shows and produced good birds at such loss of time and money as is only known by those who are genuine fanciers.

The rules respecting poultry are, that no exhibitor can ask more than £10 for the pen, and each pen is liable to be claimed for £10. I will leave the poultry exhibitors to deal with that, though as the time between the issuing of the schedules and the closing of the entries is so short, I fear the promoters of the "little game" will carry out the project this time.

In the Pigeon classes the *artiste* who framed the schedule commences his valuation at £3 for Nuns, then he advances to £4 for Dragons, another £1 is put on Turbits, and he gives breeders a big chance by allowing them to ask £8 for Tumblers, Owls, and Fantails. The owners of prize Barb, Carriers, and Pouters can actually ask £10 for each entry. What a chance for the owners of good birds! Surely the London, Birmingham, and Manchester exhibitors will cross the strip of "melancholy ocean" to compete in the new species of (home) rule under the Royal Dublin Society. I have heard a rumour that the framer of the rules gives as a reason for limitation as to price, that it will prevent the English exhibitors from carrying off the prizes, but I hesitate to believe that any countryman of mine would ever think of, much less avow, such a paltry reason. I have, as well as my friends Messrs. Montgomery, Zurhorst, Wherland, and Tivy, been successful at English shows, and I am proud to say that when we Irish exhibitors carried off the blue ribbon in some classes at London, Manchester, and Birmingham, from no one did we receive more hearty congratulations than from our English friends and rivals. It is well known that there are plenty of good birds in Ireland, and the making of such a rule by the Dublin Society can only have one object, that is, to exclude the exhibitors who have gone to the expense and trouble to get birds fit to win prizes. It is also rather singular, to say the least of it, that there is no such rule in any other branch of the Society's schedule; there is no limitation to the price that may be put on cattle, sheep, pigs, or horses, so I think I may fairly assume that the rule about the price of poultry and Pigeons has been concocted for some object other than a legitimate one.

I expect to have the support of every amateur who is interested in the best birds winning, and who objects to underhand and interested arrangements.—AN EXCLUDED EXHIBITOR, *Cork*.

MOTTLED TUMBLERS.

I PRESUME the question has been asked you as to what should be the correct markings of a Mottled Tumbler, as I read in last week's Journal, in the answers to correspondents, the following—"The best coloured picture of a Short-faced Mottled Tumbler is that in Eaton's work. The white should only be on the shoulder. They easily breed too light." I am quite willing to admit that Eaton's print of a Black Mottled Tumbler is all that need be required; but I think if you look at the print you will find that not only has that the white on the shoulder but also on the back, which should be in the shape of the letter V, or, as it is called, the "handkerchief back." I myself having had some experience in breeding Mottled Tumblers, and being one of the members of the oldest Society of Pigeon-fanciers in England—viz., the City Columbarian Society, I thought when reading your answer I would ask the opinion of the members of that

Society (Thursday last being one of our meeting nights); and it was the unanimous opinion of all members present that the proper markings of a Mottled Tumbler—Black, Red, or Yellow—also whether Short-faced or Long-faced, should be the white, or, as it is called, the "rose shoulder," and the "handkerchief back."

My reason for writing about this is simply because the remarks made in last week's Journal are apt to lead young fanciers astray—at least that is my impression; and I should be pleased to hear from any other fancier on the subject, which is to my mind one of great importance to the fancier of Mottles.—J. FORD.

BIRMINGHAM COLUMBARIAN SOCIETY.

At a general meeting of this Society, held on the 6th inst., the accounts for the past year were gone through and passed. A vote of thanks was unanimously passed to Mr. H. Allsop for the efficient manner in which he has discharged the duties of President for eight years, also to Mr. J. W. Ludlow for his services as Honorary Secretary; those gentlemen having at a previous meeting expressed their wish to retire from the offices so long held by them. The meeting then proceeded to appoint a President and Secretary for the ensuing year; when Mr. Ludlow was unanimously elected to the office of President, and Mr. H. Pratt, of Lime House, Lozells, Birmingham, to that of Honorary Secretary.

This Society is flourishing, has between fifty and sixty members, and is, we believe, the largest Society of the kind in England.

PIGEONS IN EGYPT.

As you go by rail to Cairo, and as you ascend the river, you are never long out of sight of a mud-built village. The saddest and sorriest of habitations for men and women are these Egyptian villages I have ever anywhere seen. West India negro huts are better-furnished abodes. Their best-lodged inhabitants are the Pigeons. The only storey that is ever raised above the ground-floor—which is of the ground as well as on it—is the Dovecot. This, therefore, is the only object in a village which attracts the eye of the passer-by. In the Delta the fashion appears to be to raise a rude roundish mud tower, full of earthenware pots for the Pigeons to breed in. These are inserted—of course, lying horizontally—in the mud of which the tower is built. In Upper Egypt these towers have assumed the square form, about 12 feet each side. Three or four tiers of branches are carried round the building for the Pigeons to settle on; these are stuck into the wall, and as the branches depart from the straight line, each according to its own bent, each belt of branches presents a very irregular appearance. No village is without its Dovecotes. From the summit of the prophylaea of the grand Ptolemaic temple of Edfou, I counted about forty of these Dovecotes on the tops of the mud hovels below me. The number of domestic Pigeons in Egypt must be several times as great as that of the population. I suppose if they kept pigs they would not keep so many Pigeons. They must consume a great quantity of corn—more, perhaps, than would be required for the pigs of a pig-eating population as large as that of Egypt.—(*Egypt of the Pharaohs and of the Kédive*.)

IMPORTATION OF EGGS.—The consumption of foreign eggs is still on the increase. In the first two months of the present year the value of eggs imported was £261,894, against £192,597 of the preceding year. Last month the value was much as £147,822.

PAINTED CANARIES.

WILL you allow me to call public attention to an act of injustice? In the report of Canaries at the Crystal Palace Bird Show, the following remarkable statement is made:—"In the two classes a couple of birds (Nos. 187 and 216), caused quite a sensation, owing to the very unnatural appearance they bore as regards their colour. On this account the Judges declined to entertain them as proper specimens for competition, which opinion was backed generally by fanciers from various parts of England after the Exhibition was opened to the public." This statement conveys the impression that these Canaries were coloured-up for the occasion, which, if correct, would brand the exhibitor with the infamy of fraud and dishonour. As I am the owner and exhibitor, I wish to say in defence, that these birds were moulted by myself, that there never has been dye, stain, or colouring matter applied, and that the rich colour was the result of my method of feeding. In order that the truth of my statement may be tested, I shall be glad to forward the birds to you or to any person whom you may appoint, and I have the fullest confidence that the above innuendo will be proved to be both false and unwarrantable.

I was quite prepared for what has happened, for a fancier of

this town (Derby), who has been lately proved to be guilty of these malpractices, publicly declared that *he knew* a fortnight before the Show that my birds would be passed over. How "he knew" is not difficult to judge.

Has not the time arrived when fanciers should demand a revision of the judges of bird shows? The Cheltenham staining case, the matter I now call attention to, and several other malpractices well known to me and to others, and which can be substantiated by the clearest evidence, warrant the fullest consideration of this subject.—E. BEMROSE, *Derby*.

COCKATOO CRAVING FOR ANIMAL FOOD.

I FIND an Australian Rose-breasted Grey Cockatoo very craving after meat, but all authorities seem to agree that meat must on no account be given. Can you explain how it is, that contrary to the usual unerring instinct of animals, the bird desires what is hurtful? Is it possible that in Australia they eat insects, and if so, whether British caterpillars might not be acceptable?—G. S.

[On no account give the Rose-breasted Cockatoo meat, for it is most injurious, as all Parrots and Cockatoos are strictly seed and fruit eaters. The reason your bird has such a craving for meat is that it has at some time been improperly fed. It is highly necessary that all birds kept in confinement should be dieted, and their food varied as much as possible. Feed your bird on hemp seed, a little sopped bread and milk, fruit, and plenty of green food, and be sure to let it have free access to some large, clean, dry grit, which you will find the bird will enjoy, and which will help to do away with its great desire for meat or bones. I do not at all think your bird would eat caterpillars, and I should most certainly advise you not to try it, but to feed it on the food most conducive to its health.—W.]

COURAGE OF THE GAME COCK.—Much might be said respecting the prowess of the Game cock, his powers of endurance, or his courage in defending his wives and family. Thus, a cock bred in 1814 by J. H. Hunt, Esq., of Compton Pauncefoot, Somerset, seeing a hen and her brood attacked by a fox, which actually seized and was carrying off the hen, flew at the fox and killed it, of which occurrence a plate was published at the time. Another cock is recorded to have killed a large mastiff; and had we space we could multiply such stories almost *ad infinitum*.—{*Wright's Illustrated Book of Poultry*.)

HOME-MADE WINES.—We are informed that at the request of the Commissioners of the International Exhibition, our correspondent, Mr. Robert Fenn, of Woodstock, so long associated with the home manufacture of grape, gooseberry, and other garden fruit wines, has sent to the International Exhibition, at South Kensington, about thirty samples in bottle of the results of his labours in wine-making for the past fifteen years.

THE HIVE CONTROVERSY.

MR. PETTIGREW, although he has refused to compete with the straw skep against the bar-frame hive, has given no valid or satisfactory reason for doing so, considering that he upholds the former against every other hive extant. His proposals, made some six weeks ago, were so impracticable, and so little likely to settle any question at issue, as has been clearly shown by your able correspondent, Mr J. Lowe, page 194, that I regarded them more as a "dig" at the bar-frame principle than as otherwise worthy of notice, although Mr. Pettigrew says they were "fair and comprehensive." He wants a competition to include "five or six kinds of hives," but in bee culture I maintain there are but two kinds of hives extant—viz., those with fixed and those with moveable combs; and whatever may be the size, shape, make, material, or system, all hives must be of one kind or the other, as all advanced apiarians will agree; and it is really between these two principles that the competition must take place if a competition be at all necessary.

What kind of trial Mr. Pettigrew intended, and what his idea of the bar frame principle is, may be gathered from his own words, "I myself would exclude the owners from interfering with or going near their hives during the season of trial, for it is not a question of good management;" so that because Mr. Pettigrew's skeps cannot be managed, all the advantages of the bar-frame moveable comb principle must be thrown away. In my letter of February 6th I advanced the broad principle that all hives with moveable combs are superior to those with fixed combs, and I offered to accept any conditions which Mr. Pettigrew or any other gentlemen thought fair and right, but I showed plainly that I think very much more of the "management" of bees than I do of the hives they are in, provided they have moveable combs and are large

enough, and I should have been governed in my choice of hives for the respective trials entirely by the conditions which I expected to have forced upon my acceptance. I entirely deny that any merit is due to any class or variety of hive as a means in itself of acquiring honey; so that if the proposed competition took place, it is probable that in the class for swarms results would be pretty equal, as I offered to submit to Mr. Pettigrew's own terms, leaving the bees entirely to themselves. A competition between the two classes of hives for multiplying stocks and swarms and raising queens is one in which Mr. Pettigrew must well know he has no chance, as the facilities given to all operations by the bar-frame principle with judicious management would leave him nowhere. The trial of honey-getting in my hands as against him would have further proved the value of management, for with the aid of the honey-slinger I am confident I could have at least double his quantity of honey, notwithstanding all the supering, nading, or eking, or any other means short of "clever trickery," which he may or may not understand or adopt.

I maintain that, having taken bees out of a state of nature for our own profit or diversion, management is everything; and if as much time and trouble were taken to inculcate a better knowledge of the natural history and habits of bees, as is now worse than wasted in useless squabbling about their domiciles, there would be fewer failures in bee-keeping, and less to complain of in regard to hives and their manufacturers and vendors. With a better knowledge of bees, the various systems, so called, would be better understood, and it would be impossible for anyone to make such a mistake as to declare that honey stored in any particular form of hive is better than that in any other.

It is singular that Mr. Pettigrew should so confound hives, systems, and management. What is his or any other hive without a system? And what is a system but a system of management? No system can be other than equivocal which does not insist upon a knowledge of the habits of bees, for it is they that are managed and not their hives, the latter being only the means to that end.

The larger part of Mr. Pettigrew's last letter is taken up in an endeavour to create an impression against me on account of a reply I gave to a querist in the *English Mechanic* on October 11th, 1872, to whom I gave exactly the reply he has quoted, and I maintain the opinion therein conveyed. Mr. Pettigrew incorrectly says, "I went a long way out of my way to meet him," whereas the truth is the querist who signed himself "M. P.," after asking of me individually by name no less than nine questions, says, "I should like to know somebody's opinion of Mr. Pettigrew's system," and I gave mine, as I consider I had a perfect right to do. Mr. R. Symington in these columns, November 7th, 1872, page 374, and "A LANARKSHIRE BEE-KEEPER," on December 12th, page 483, declares there is nothing new in the so-called system; and the latter gentleman, so far back as December 28th, 1871, considers Mr. Pettigrew a blind leader of the blind, and asks him for the sake of the readers of this Journal, "and his own honour" to give "an account of his experiences with the Ligurian bee." His book is for "the guidance of inexperienced bee-keepers," yet he is wrong in some of the most important facts in the natural history of the bee. The late Mr. Woodbury proved him wrong in his data in queen-raising, and the "Handy Book" contains letters of Mr. Woodbury and Mr. Pettigrew, which proved the latter to have been in ignorance of the law of impregnation of eggs. He devotes a short chapter to fertile workers, but confesses he knows nothing about them, and evidently does not believe in their existence. He does not recommend the sulphur pit, but he considers its use as not more cruel than it is to cut the throat of a sheep to obtain the mutton, and after giving most elaborate directions for its preparation and use, accumulates the horror of the thing by directing that a kettle of boiling water should be poured on the half-suffocated bees; and yet he boasts that his "Handy Book" has saved the lives of more bees than all other works, ancient and modern. What would the Rev. Charles Cotton, the "prince of bee-masters," say to this?—C. N. ABBOTT, *Hanwell, W.*

SAVING A STARVING COLONY.

LAST autumn I wrote to you for advice respecting a hive that had the combs broken or melted down by the sun, all the stores for the winter being wasted. Your advice was to feed liberally.

I began immediately to feed on the top with syrup, but the bees could not be induced to take it down. I thought first that the bees could not get at it through the perforated zinc, I therefore took the zinc away and thrust the neck of the bottle through the hole, and also filled some comb with the syrup, as one of your correspondents recommended some time since, but with the same result. Of course I gave up all hopes of saving the bees through the winter. I thought I would try feeding with dry sugar, letting it go down amongst the bees, and I also poured down a little syrup. This I have continued doing until now, and am pleased to say that the bees are living, and, I think,

doing well, as on fine days they are very busy carrying in pollen.

Do you think it possible to drive the bees into a Woodbury hive, as I do not like the appearance of the one they are in? Or would it be better to wait and see if they should throw off an early swarm? I suppose they may be saved now if I continue feeding, as I should much like to do so after taking so much trouble. The bees had not an ounce of honey in the autumn, so have survived the winter on dry sugar, with a little syrup occasionally.—JOHN G. WEBBER.

[We are glad that you have succeeded in saving your bees, as you deserve success after taking so much care and trouble. You had better continue your assistance for the present, as a few weeks of ungenial weather might now prove fatal to the bees. We have always condemned the use of dry sugar, as much of it is necessarily wasted. You had better not attempt transferring the bees and combs into a box, but wait for a swarm. No doubt your constant feeding has promoted early and rather extensive breeding, so that the bees will require a rather more liberal supply of food than you have hitherto given if the spring be wet and cold. We should recommend your now again trying the bottle, being sure that your syrup is of the right quality, giving a few ounces two or three times a week.—Eds.]

OUR LETTER BOX.

TUMOURS IN HENS (J. Curtis).—The disease you mention is by no means uncommon with hens. We never saw it in pullets, but after they have passed into hens and have done laying their first eggs, small spots of yellow cheesy matter may be found between the skin and the flesh. These frequently increase in bulk and become hard. The older fowls are, the more liable they are to this disease. The only cure is to remove the tumours when they first begin to increase in size. We take them to be indications of age, like certain appearances in some human subjects known to, but not admitted, by people between sixty and seventy years old.

HEN WITH DUCKLINGS (Novice).—The best place in which to put a hen with ducklings is an old pigsty, it generally affords space, and slush between the stones of the flooring. It prevents the ducklings from being dragged to death, and saves the hen the misery of seeing her brood in danger (as she thinks), of a watery grave. They should not be taken from the hen till they are seven or eight weeks old. Oatmeal put in a shallow vessel of water with a little grass, and sometimes a few long small strips of horse flesh, are very good food at first. They may afterwards have whole corn. It is too early to condemn for colour of bills or feet.

COCK HEN-PECKED (L. C.).—Birds like to be pecked, and will stand for hours not only while feathers are pulled out, but while their flesh is eaten. It is a fevered, dissatisfied, and diseased state of body that causes the pecking in the first instance. It is a craving for some food or medicine to which the feather bears resemblance. Discontinue the potatoes, they induce excessive internal fat, but they give neither bone nor sinew. They do not, as a rule, require beer at this season of the year. Feed on slaked barleymeal or ground oats morning and evening. Give Indian corn or scraps at mid-day. You must remove the cock from the hen during the day. Let him run for an hour daily with the hens, and then take him away. Rub the bare part with compound sulphur ointment.

OLD HENS AND YOUNG ONES (A Constant Subscriber).—Both can be marked by wire put round the leg or pieces of list fastened on with needle and thread. Holes may be made in the web of the wing with a red-hot iron, marks or notches on the beak; with many others. By your poultryer, do you mean a man who sells poultry, or one who looks after yours? In either case you have not fallen on a *cordon bleu*. We advise you to try again. "Better luck next time." Nothing is easier than to tell a pullet from a hen; but nothing is more difficult than to class correctly a forward pullet, a young hen, or a fattened old one. Could they be asked, the last two would admit they were of a "certain age;" but they might defy any one to say what it was.

BANTAM COCK CROOKED-BREADED (Amateur).—Such a cock as you describe would have no chance if properly judged. We prefer the little that is left of the deaf ear to be red. The wheaten hen is much lighter-breaoded than the others, and is generally used when the birds are getting dark and cloudy.

SEA-SAND FOR FOWLS (Par).—The sand from the sea-shore will not hurt your poultry. Salt is good for them. Aylesbury Ducks will lose the delicacy of their bills if they have access to sea water. We have heard of people who hired cocks for a run, but we know no one who lets them.

COLOUR OF HOUDAN'S EGGS (G. B.).—The Houdan's eggs should be quite white. We should not expect to hatch pure Houdans from eggs coloured like Guinea Fowls.

COCK'S COMB SLIGHTLY INJURED (T. S.).—The accident to the comb of your Partridge cock would not disqualify him; but if shown against a perfect bird he would lose the prize. A crooked-combed Cochin hen has no right to take a prize; but the defect is not of necessity hereditary.

BRAMHA COCK'S SPURS TOO LONG (J.).—You run no risk in cutting the spurs of the cock, provided you do not reach the quick, which is only at the base of the spur. The best thing to cut them with is a saw made from the main spring of a watch. As it causes no pain, you can cut piece by piece in perfect safety, as long as you find you have only bone to encounter.

PIGEONS DISEASED (Alpha and H. C.).—Both your Pigeons are suffering from the effects of damp and cold, neither can it be wondered at considering the variability of the weather. It should be borne in mind that Pigeons can bear any amount of heat. In coiled warm houses, giving them at the same time plenty of room, they are sure to prosper. In damp or draughty places they never do well. Give hempseed with their food for a time, and good old beans.

POINTS IN LONG-FACED ANTWERPS (H. C.).—1st, Beak like a Dove's; 2nd, eye bolting; 3rd, forehead raised; 4th, shape compact. Colour not a particular point.

CARRIER PIGEONS (T. A. W.).—Wattle, &c., not fully developed until four years old. Flights and tail as good as black as you can get. Mate black with

black, or with dun, which produces the best black. Give any good old beans not too large. Peas all Pigeons like, but they are not so good for high-class birds as old tares and beans, or even as Indian corn.

GUINEA PIGS (A Subscriber).—Any dealer in birds, &c., in St. Martin's Lane, London, W.

BUCKWHEAT (X. X.).—It may be obtained from any corndealer, especially in Suffolk, where it is cultivated and known locally as "Brank."

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.					IN THE DAY.					Rain.
1873.	Baromet- er at Sea level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature			
March.		Dry.	Wet.			Max.	Min.	In sun.	On grass		
W. 5	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Th. 6	29.867	46.1	44.6	N.	43.2	52.2	42.9	63.2	40.0	0.010	
Fri. 7	30.084	41.2	38.4	N.	42.7	47.2	34.6	68.3	32.5	0.115	
Sat. 8	29.332	45.9	44.7	S.E.	42.2	50.4	40.1	75.0	33.2		
Sun. 9	29.677	42.3	39.8	W.	41.4	51.8	34.2	94.8	31.3	0.038	
Mo. 10	29.730	46.3	43.9	S.	41.6	50.8	41.1	80.2	37.6	0.243	
Tu. 11	29.328	41.2	38.5	S.W.	42.3	46.7	36.5	86.5	33.3	0.040	
	29.208	37.5	36.7	S.W.	41.6	48.9	32.8	86.1	30.2	0.010	
Means	29.617	42.9	40.9		42.1	49.7	37.5	73.2	34.9	0.056	

REMARKS.

5th.—Dull morning, fine at noon, occasional rain after; but a beautiful moonlit night.

6th.—Rather dull in the morning, very dark between 10.30 and 11 A.M., but fine and quite bright soon after, and so continued all day.

7th.—Rainy morning, fair from noon, and a beautiful night.

8th.—Fair in the morning, with white frost; fine all the forenoon, soft hail balls at 1.30 P.M., lasting (as usual) only a few minutes; the remainder of the day fine.

9th.—Rain in the morning, fine in the middle of the day; rain about 4 and again at 8.30, and hail, with heavy rain for a short time about 11 P.M.

10th.—Rain in the morning, cold and dull all the day, except a few gleams of sunshine.

11th.—Showery and windy, but at times very bright sunshine; the coldest day this week.

A very seasonable week. Probably the most noticeable feature is the recurrence of a fall of soft hail balls on March 8th. I have noticed a similar fall on that or the next day almost every year for ten or fifteen years past.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 13.

No new features in the market to report upon. A slight advance has taken place in first-class produce from the open ground, but no general improvement in prices. Hardy produce is, however, in general request, and the stands emptied on the market days. Large consignments of new Potatoes are offered from Malta and the West Indies. Hothouse Grapes and Strawberries are good, and sufficient for the trade.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	sieve	3	0 to 5	Mulberries.....	4	lb.	0	0 to 0
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	per lb.	0	0	0	Oranges.....	4	100	4	0 to 0
Chesnuts.....	bushel	12	0	20	Peaches.....	doz.	0	0	0
Currants.....	4	sieve	0	0	Pears, kitchen.....	doz.	1	0	8
Figs.....	doz.	0	0	0	Pears, dessert.....	doz.	8	0	12
Figs.....	doz.	0	0	0	Pine Apples.....	lb.	6	0	10
Filberts.....	lb.	0	0	0	Plums.....	4	sieve	0	0
Gobs.....	lb.	2	0	2	Quinces.....	doz.	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	6	0	12	Strawberries.....	4	oz.	1	0
Lemons.....	4	100	6	0	Walnuts.....	bushel	15	0	80
Melons.....	each	0	0	0	ditto.....	4	100	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0 to 6	0	Mushrooms.....	pottle	0	0	to 2
Asparagus.....	4	100	5	0	Mustard & Cress, punnet	0	2	0	0
French.....	15	0	50	0	Onions.....	4	bushel	3	0
Beans, Kidney.....	4	100	2	0	Pickling.....	quart	0	6	0
Bect, Red.....	doz.	1	0	8	Parsley per doz. bunches	0	0	4	0
Broccoli.....	bundle	0	9	1	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	1	Peas.....	quart	6	0	10
Capiciums.....	4	100	0	0	Potatoes.....	bushel	4	0	7
Carrots.....	bunch	0	6	0	Kidney.....	doz.	0	0	0
Cardiower.....	doz.	1	0	4	Round.....	doz.	0	0	0
Celery.....	bundle	1	6	2	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	6	4	Rhubarb.....	bundle	0	8	1
Cucumbers.....	each	1	6	3	Salsify.....	4	bundle	1	0
pickling.....	doz.	0	0	0	Savoy.....	doz.	2	0	3
Endive.....	doz.	2	0	0	Scorzoneria.....	4	bundle	1	0
Fennel.....	bunch	0	3	0	Sea-kale.....	basket	1	0	2
Garlic.....	bunch	0	6	0	Shallots.....	lb.	0	0	0
Herbs.....	bunch	0	3	0	Spinach.....	bushel	3	6	0
Horseradish.....	bundle	3	0	4	Tomatoes.....	doz.	0	0	0
Leeks.....	bunch	0	2	0	Turnips.....	bunch	0	8	0
Lettuce.....	doz.	1	0	2	Vegetable Marrow.....	0	0	0	0

POULTRY MARKET.—MARCH 12.

Our supply is still very small, and the tendency of prices is upwards.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	4	6	to 5	0	Pheasants.....	0	0	0	to 0
Smaller ditto.....	3	6	to 4	0	Partridges.....	0	0	0	0
Chickens.....	3	0	3	6	Hares.....	0	0	0	0
Guinea.....	7	0	8	0	Kabbits.....	1	6	1	6
Guinea Fowls.....	3	0	3	6	Wild ditto.....	0	9	0	10
Duckings.....	8	6	to 4	0	Pigeons.....	0	10	1	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 20—26, 1873.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	a.
20	Th	Hyacinth Show closes.	51.1	33.8	42.5	17	4	46	11	46	48	1	23	8	21	7	32
21	F		50.7	32.5	41.6	19	2	6	13	6	48	1	4	9	23	7	13
22	S		50.4	34.3	42.3	20	0	6	14	6	57	2	56	9	23	6	55
23	SUN	4 SUNDAY IN LENT.	50.7	35.1	41.9	18	57	5	16	6	56	3	5	11	24	6	37
24	M	Meeting of Royal Geographical Society,	48.7	31.7	40.3	16	55	5	18	6	40	4	after.		25	6	13
25	Tu	LADY DAY. [8.30 P.M.]	50.9	32.8	41.9	16	53	5	19	6	12	5	57	1	26	6	
26	W	Royal Botanic Society's First Spring Show.	51.8	32.6	42.2	16	50	5	21	6	35	5	23	3	27	5	85

From observations taken near London during forty-three years, the average day temperature of the week is 50.6°; and its night temperature 33.0°. The greatest heat was 69°, on the 20th, 1835; and the lowest cold 14°, on the 25th, 1850. The greatest fall of rain was 1.11 inch.

HEATING—FUEL.—No. 1.



WING to the present high price of coals it is probable that many persons will be prevented from indulging in forced flowers, fruits, and vegetables to the extent they have been accustomed; whilst as all materials of construction are greatly enhanced in cost, serious obstacles will be placed in the path of those contemplating the erection of horticultural structures. The prices of bricks, stone, mortar, glass, and wood are higher, but their cost has advanced far less in proportion than that of labour, which, except in the case of the gardener, has been variously increased by 10, 20, or 25 per cent. Iron has attained such a price as to cause those favouring it for the construction of horticultural erections to think twice before they give an order, and the cost of iron pipes for heating by hot water must, I am afraid, deter many from adopting them as a mode of heating.

Apart from the first cost of providing for heating a house or range of houses by hot water, as compared with that of heating by hot air, the increased price of fuel leads to the consideration not of which is the best mode of heating, but which, affording under judicious management satisfactory results, is the most economical. The cost of heating by hot water has not, so far as I am aware, been considered from an economical point of view, its superiority in this respect having been established over heating by hot air or flues. The apparent difference as regards the effects on vegetation between heat radiated from brick, stone, or the like, and that from hot-water pipes, results not so much from the radiating material as from the mode of applying the heat. The difference between a hot-water pipe and a flue is just this—by the former the heat is given off, or the air of the house warmed, by pipes uniform in temperature, or very nearly so, throughout their extent; whilst by the flue the heat is radiated at a temperature considerably higher where the flue enters than it is after the flue has passed along half the length of the house, to say nothing of its exit. Another evil of heating by hot air is that the products of combustion are carried along with the heated air, and find their way through the cracks of the materials, and, as everybody knows, are not beneficial to vegetation; but there is no such objection to heating by hot water. It cannot be said of hot air that it is so desirable for heating greenhouses and hothouses as hot water—in fact, my experience of flues prompts no word in their favour.

I should be unwilling to say that hot air is more economical than hot water were that proven, and to my mind it is not. It is more costly to have a boiler, iron pipes, &c., for heating by hot water than to have a furnace and flue for heating by hot air. The first cost is greater—double or treble, but there is no saving of fuel. In heating by a flue the brickwork of the furnace absorbs and retains a great amount of heat. This is radiated from the exterior of the furnace setting, and is lost to the house; only when the heat of the fire is less than the heat of the

furnace surroundings can the house derive any benefit from the heat absorbed at the furnace. This being the case with a furnace for affording heat to a house, it may be singular that a corresponding waste of heat does not result in the case of a furnace for heating by hot water.

As regards the majority of furnaces for boiler heating, there is not much more to be said in their favour than in that of the furnaces constructed for heating by flues. The sides of the furnace are brickwork, and are heated to a temperature of 1141° (the heat of a common fire, according to Daniell), while the heat on the fuel over a fire of this kind (the fuel not burned through) is not sufficient to melt lead (594°). Thus we have in the furnace a heat that would melt lead, zinc (700°), antimony (810°), and we only act on the boiler with a temperature of little more than half that of the bricks. In this case we lose half the heat of the fire when the fuel is not burned; but when the whole of the fuel is brought to a red heat we act directly on the boiler with a temperature of considerably over 1000°, and yet we lose the heat at the sides of the furnace; and the end of the furnace opposite the door being of brick that is made red hot. The heat may then pass through the boiler, surrounded by water, and not unfrequently it passes along the sides, heating quite as much brickwork as iron of holding water. In some cases, too, it passes over the top of the boiler heating the top of the flue very much more—though there we do not want the heat—than the bottom, where we have water which we wish to be heated. We expend in fact one-half, and in some cases more than half, the heat of the fuel in the furnace without deriving any corresponding benefit.

In my opinion the heating powers of a boiler or boilers are wholly dependant on the surface the boilers expose to the action of the fire; direct, the exposure is the most important, but the indirect is not insignificant. What must be the waste of fuel when half of its heat is expended on surrounding surfaces, and half of that heat passing over the surface of the boiler escaping by the chimney? I know that some contend, or have done, that the side heat of a furnace is of no use for heating a boiler, that hollow grate bars are an evil. Professing no knowledge of the theory of heat beyond what has been verified by my own experience, I confess to being at a loss to explain why any material in contact, whether below or at the side of a red-hot furnace fire should not be heated. I know that the sides of a boiler furnace are made red hot, and the grate bars are burned through. No better illustration can be given of the value of the side heat of a furnace for heating than having a boiler fixed behind and at the side of an ordinary house fire. With properly fixed hot-water pipes it will heat a room equal in extent to that in which the fire is situated. Thus we secure double the heat from the same fuel. There is no loss of heat to the room, but a clear saving of heat cent. per cent.

Again, let us have a boiler fixed on the fire; it shall be so set that the fire can act on its lower and front surface, but not on the back, the heat being made to pass in front to the chimney, and from this again we get hot

water to heat a room equal in size to the one the fire is situated in and to the same temperature. Thus we save another cent. per cent. of heat, and experience no diminution of temperature in the room. We cause the heat to be expended at the fire, instead of its being absorbed by surrounding surfaces, or expended by radiation and passing up the chimney. Absorb the heat in hot water in this way, and the heat passing up the chimney will be found extremely small.

Whilst alluding to house fires I must remark on the great attendant waste of coals. Nothing is so wasteful as an open fire grate. It is absorption of the heat of the fire on three sides, radiation on the other three, and the only one of benefit to the room is the front, which suffers continual diminution or loss from the cold air entering by the door, or the draught of air caused by the heated air ascending by the chimney, and the consequent passage of cold air to supply its place. We have a fire ostensibly to warm a room, and its warmth during the continuance of the fire, and afterwards until the chimney is cooled, is being sucked out of it. This may be all very well if the object be to cause a circulation of air to displace a foul atmosphere by fresh, but as respects heating economically it is absurd. It would be far more economical and very much more effective to have a stove, the atmosphere of the room being warmed by the radiation of the heat from every part of the stove, not fixing the stove in a wall recess, but detached from walls, and with a flue to carry-off the smoke, &c., resulting from the combustion of the fuel. The atmosphere, it must be admitted, would suffer considerable loss of temperature from the fire taking in the quantity of air required for the combustion of the materials used as fuel, and the ingress of cold air into the room to supply the equilibrium of the air of the room. This stove-heating would give in a room a temperature equal to that secured by an ordinary fire grate consuming four times as much fuel. What the loss of heat by the fire drawing its supply of air from the apartment may be is not readily ascertainable, but that a varying and considerable loss is in that way effected must be patent to those paying careful attention to the subject. The difference could readily be tested by feeding the fire with air through a pipe or tube with one end immediately under the fire and the other communicating with the external air, the stove being sealed in the room as far as that could be effected by close-fitting doors where the fuel is admitted. By a damper the air admitted as well as that escaping could be regulated at will. This, I make no question, would secure considerable increase of heat to the room.

Anything better calculated than our fire grates, with their wide-open chimnies, to waste fuel could not well be conceived. Nothing can be said in their favour except that they secure a change of atmosphere; but could not this be effected by a direct supply of fresh air from the external atmosphere, at the same time allowing the vitiated atmosphere of the room to pass off? I believe a contrivance has been patented for supplying ordinary house fires with air direct from the atmosphere by means of flues at the back, sides, or under the fire, which causes the heat to be directed into the room, the vitiated atmosphere being carried off by a funnel. This is said to effect a saving of three-fourths of the fuel, and I fully believe it. How unfortunate it is that inventions of this kind should be fettered by patents! The invention may be seen in operation at the office of Mr. Peachy, architect, Northgate, Darlington. Mentioning Darlington reminds me that one of the family of Pease has offered to bear the expense attendant on the formation of a gardeners' institute in that town. Is this to be the commencement of what I have said more than once in these pages—viz., we shall have institutions in all our large towns for the mental improvement of gardeners on the principles of mechanics' institutes? I am persuaded we shall, and I view this commencement with much satisfaction.

Other means have been proposed with a view to economise coal in house fires; among them is noticeable a grate which may be placed in another grate so as to reduce the size of the fire space. It is the invention of Mr. Walker, of York, and is to be had of most ironmongers at a cheap rate. It is said to effect a considerable saving of coal. Another project is the mixing of small coal with an equal amount of clay, the latter brought to the consistency of puddle and then thoroughly mixed with the small coal, forming a sort of mortar-like substance; but there is this disadvantage—namely, the fire must be made of coal in the usual way, and the "cats," as they are called, afterwards added, surrounding them with coal. The "cats" are made up into balls by hand.

I mention these methods as indications of a desire on the

part of those interested to adopt any simple means of keeping down the coal bill. Nothing destroys prejudice so quickly as permitting the pocket to be affected; but so long as the heat afforded by coal is allowed to make its escape after being generated there cannot be, in my opinion, any great saving of fuel. We must remodel our fire grates, and, whilst retaining the heat, allow the products of combustion to escape without taking along with them more than a small amount of the heat, instead of the half or more passing away by the chimney. It may be vain to expect any great saving by the conversion of coal into coke, the abstraction from it of the gas, and using the latter as well as the coke for heating purposes. I am sanguine, however, that it would be a considerable saving, and I should be glad if any of your correspondents would tell us the heating properties of gas, say how many feet of cubic air could be warmed to a given temperature by burning a thousand feet of gas, the cost of making or value per thousand feet, also the quantity of gas to be had from a ton of coal, and the weight of coke that would remain after the abstraction of the gas, with the cost for labour.

I shall conclude this paper by observing that my remarks are intended as suggestions, and that information and criticism are desired, for we shall some day have an almost smokeless cheap fuel, and so much of its heat as is present will be prevented escaping by the chimney.—G. ABBEX.

ORCHARD-HOUSE NOTES.

The present season being a late one had the effect of bringing out the perfect bloom in our orchard houses only on the 12th of this month. I generally reckon this point of perfect bloom to be when the leaves begin to accompany the blossoms, and are about an inch long. At that time the houses look at their best. The greatest living poet had talked of coming to see them, but really the sight, though pretty enough, is not of itself enough to warrant such an honour. The training of the cordons is effective no doubt, but after much experience of visitors I have ceased to look at an orchard house in bloom as the very best time to see it. I think, though, that the lovely white blossoms I saw at Chiswick and at Sawbridge-worth (of which one expected to hear more) were a great gain in point of effect.

Possibly at this advanced stage of knowledge it may be superfluous to hint to possessors of orchard houses that it is essential to the setting of the bloom to shake, or rather strike, the various parts of the trees smartly with a pole. By neglecting this we certainly had less bloom set last season.

I have never painted my Peach trees till this winter, when, finding traces of scale on a few, I coated the stems and branches with ordinary oil paint, and filled-in the hollows with thicker paint. This, if of a greenish hue, is inconspicuous, and very easy to apply. The brush slides over the branches easily, and the trees look well now, and are very healthy. After all, what is there objectionable in paint more than in the slimy compositions too dear to gardeners? Does paint clog the pores more? The oil nourishes if anything, and the paint is easily put on, nor does it come off on the clothes of passers-by. Most remedies act mechanically by glueing-in insects' eggs. If of stronger composition they injure the foliage and bloom. I have also applied paint to my Vines, just missing the buds, and all appears prosperous.

I have little faith in any remedy for red spider, except vigorous and constant syringing. Sulphur for mildew in Vines seems also at times curiously ineffective. Several seasons ago mildew appeared in a vinery 80 feet long, and there only; soon the leaves were whitened, and the very wood stained. We tried sulphur in various ways, but could not conquer it. Then next season we tried wiping with soft wet cloths dipped in sulphur. This did better, and finally, the next season, we found dry cloths passed round each berry—say fortnightly—completely cured the disease. It vanished from the house; every leaf and berry became healthy, and the crop was sold for Covent Garden with only the bloom gone from it, being of the usual size, and well coloured. Even this wiping was not very long to perform; and as to bloom, well, these Grapes being not for our own use, who looks for bloom in dealers' Grapes in September? Last season I was surprised to see a few berries beginning to mildew in this house, as it had been otherwise in perfect health, but we soon cut them away. These isolated cases appeared only in a passage glazed between two doors always open in summer, and in a great draught, and nowhere else, except in three very small vineries subject to

great alternations of heat and cold; in other words, hot and draughty.

Although the disease in question appears also in vineyards, still there may be some similar reason even there why Grapes should be affected by the change from a very burning day to a night of cold evaporating rain, else why in four instances where there were cold draughts, and in these only out of some ten houses, should the mildew show itself? In the Potato disease, which is akin to this one, sudden atmospherical changes are highly predisposing to blight. We must, however, confess to our ignorance, as yet, as to the true causes of mildew, &c., though we seem to be on the right track.

During the period of the blooming of the orchard-house trees here many days were unfavourable, from violent winds accompanied by cold sleet and rain. It was certainly a triumph of horticultural skill to be able to witness the trees in full beauty under a downfall of deadly sleet on the glass, so calm and sheltered, and to know they were safe. In the open air nothing could have saved the crop, except the glazed copings new in fashion, and which I admire greatly when combined with good front defences. I prefer orchard houses, of course, and where very stormy winds prevail, I should do so especially. The other evening a furious squall of wind and sleet broke over us. Fearing lest the servants should have forgotten to secure some portion of the many ropes and weights of the houses, I took a light and wandered all over them, examining them thoroughly (the more so, as there is access from the sitting-room to several hundred feet of glass), and whilst the frantic storm raged without, bending every rafter, and the panes were thick with melting snow, it was a picture of true beauty to see each pink blossom nestling near its friendly group of leaves, illumined by the light I carried, which waved and flickered in the draught. Though I have a familiar experience of storms such as are unknown to inland dwellers, there is still to me an over-new source of admiration in the perfect security of the trees, and of their two-thousand yearly produce, which has never as yet these many years been diminished.—T. C. BREHAUT, *Richmond House, Guernsey.*

ROYAL HORTICULTURAL SOCIETY'S SHOW AND COMMITTEE MEETINGS.

MARCH 19TH AND 20TH.

THE Show of Hyacinths and other spring flowers opened on Wednesday, and will be continued to-day. We remarked on the last occasion, but a fortnight ago, that horticulturists seemed to be thoroughly determined to support the Society, and that remark holds good of the present Exhibition as it did of that which is past. Marvellous, indeed, are the Hyacinths shown; when such men as Messrs. Veitch "go in" to win they do so with a will, and what is more, with a skill that must carry them to the front. Nor need the defeated repine at their fate; there is not a discreditable collection in the Show. Fourth prizes in some cases were awarded; they were well earned—better earned than many first prizes in former years. This more particularly applies to the amateurs' classes, for the names of Paul and Cutbush have always maintained their own most honourably, and with varying success in those which belonged to them. A very great improvement is manifest in the amateurs' classes for Hyacinths, the first and even second-prize collections being of such excellence as would do great credit even to the largest growers. The same remark applies to the Tulips, which, it is true, are comparatively few, but still what there are, are very good. Of miscellaneous subjects there is as usual an ample and attractive display.

Class 1 was for fifty distinct Hyacinths, nurserymen only. There are two exhibitors—viz., Messrs. Veitch, of Chelsea, and Messrs. Cutbush, of Highgate. Messrs. Veitch are first with, probably, the most magnificent collection ever exhibited, the spikes being of the most massive description, and the bells large and beautifully coloured. The varieties are:—*Single Red*—Howard, L'Ornement de la Nature, Gigantea, very fine blush; Scarlet Light, Vuurbaak, splendid; Princess Alexandra, very large and beautiful in colour; Princess Clothilde, Emmeline, blush; Macaulay, Princess Charlotte, Beauty of Waltham, bright rose with a white eye; Prince Albert Victor, a splendid deep crimson; Fabiola, Cavaignac, Lina, large and extremely brilliant; Garibaldi, Victor Emmanuel, Koh-i-Noor, and Von Schiller. *Single Blue*—Grand Lilas, Czar Peter, very large; Charles Dickens, Admiral de Ruyter, with immense spike and bells; Orondates, De Candolle, King of the Blues, Lord Palmerston, Marie, very fine; Lord Byron, Blondin, Sir John Lawrence, Prince Albert, General Havelock, and Lothair. *Single Lilac or Mauve*—Sir Henry Havelock, Charles Dickens, and Haydn. *Single White*—Paix de l'Europe, Miss Nightingale, Alba Max-

ima, Grandeur à Merveille, L'Innocence, Snowball, La Grandesse, Queen of the Netherlands, and Baroness Van Tuyll. *Single Yellow*—Ida and Bird of Paradise. *Double Red*—Princess Louise. *Double Blue*—Van Speyk. Messrs. Cutbush's second-prize lot contains fine examples of Gigantea, Milton, Grand Lilas, King of the Blues, Mimosa, Queen of the Netherlands, and many of the kinds already named, though not equal in size and symmetry of spike to the first-prize collection.

In the nurserymen's class for eighteen Hyacinths, Messrs. Veitch and Messrs. Cutbush again occupy the same relative positions, Messrs. Veitch being first with a marvellously fine collection, containing the largest spikes both for length and breadth we have ever seen, and absolutely perfect. They are, too, very even in size throughout, notwithstanding that the collection includes several varieties not usually attaining the largest size. The kinds are:—General Havelock, King of the Blues, Feruck Khan, Grand Monarque, Blondin, Prince Albert Victor, Fabiola, La Grandesse, Macaulay, Argus, Koh-i-Noor, De Candolle, Gigantea, Haydn, Garibaldi, Grandeur à Merveille, Ida, and Gigantea. Messrs. Cutbush's are also of high excellence. In it are remarkably fine examples of De Candolle, Howard, La Grandesse, Prince Albert, Macaulay, Haydn, Grand Lilas, and others. Messrs. Carter, Dunnett, & Beale, Crystal Palace Nursery, Forest Hill, are third with a very good lot.

In the amateurs' class 3, for twelve, Mr. G. Withall, gardener to A. Travers, Esq., 28A, Addison Road, Kensington, is first with large and extremely fine spikes; Koh-i-Noor, Vuurbaak, Cavaignac, Gigantea, Grandeur à Merveille, King of the Blues, and La Grandesse being especially noteworthy. Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford, is second with a collection of high quality; Macaulay, Lord Derby, Leonidas, and Gigantea being specially noticeable for size and quality. Mr. Weir, gardener to Mrs. Hodgson, The Elms, Hampstead, is third with a very good twelve. In the class for six, the Rev. H. H. Dombain, Westwell Vicarage, Ashford, Kent, is first with large and exceedingly well-grown spikes; Mrs. E. Wilding, 1, Chesterfield Street, Euston Road, being second; Mr. E. Rowe, gardener to Mrs. Lewis, The Rookery, Roehampton, third; and Mr. George, gardener to Miss Nicholson, Putney Heath, fourth.

The next, Class 5, is for amateurs who have not previously taken the Society's prize for Hyacinths. Here Mr. G. Withall, gardener to A. Travers, Esq., is first with superb examples of Fabiola, Lothair, Macaulay, Feruck Khan, Mont Blanc, and Koh-i-Noor. Mr. Farrow, gardener to G. Batters, Esq., Brigadier Hill House, Enfield, is second, Mrs. E. Wilding third, and Mr. D. Pizzey, gardener to Sir E. Perry, Fulmer, Slough, fourth, each having very good specimens.

The next class was for six new kinds never before exhibited. Messrs. Veitch were awarded the first prize, the half-dozen consisting of Salmon King, with a broad compact spike, salmon, with a deeper-coloured stripe in the centre of each segment; Lady Tuyl, silvery rose with a bright pink stripe, fine spike; Lord Cairns, a peculiar-coloured blush, suffused with rose; Princess Beatrice, and Mary, pure white, with excellent spikes, the bells closely set and with broad segments; and Massini, one of the single blue class, with immense spike and bells, pale porcelain blue—this received a first-class certificate. Mr. Douglas, Loxford Hall Gardens, took the second prize. In his collection Hector is a splendid intense crimson, and if the spike prove larger and more compact after cultivation it will be an acquisition. Sybil, a new single red, has large bells with broad segments, blush deepening to rose in the centre of the segments, and it promises to have a large spike.

Tulips are not numerous shown, but the quality is very good. Messrs. Veitch are the only exhibitors in the nurserymen's class, and take a first prize with Proserpine, White Pottebakker, Vermillon Brilliant, Canary Bird, Rose Luisante, and Keizer Kroon, bloomed to perfection. In the amateurs' class the prizes go to Mr. Weir, Mr. Rowe, and Mr. Withall, in the order in which their names are given. The varieties exhibited are for the most part the same as those shown by Messrs. Veitch.

Of Crocuses there is only one collection—that from Messrs. Veitch, which takes a well-merited first prize, being admirably bloomed. It includes of white kinds Theba, Mont Blanc, and Caroline Chisholm; of lilac, blue, and striped, Othello, Sir Walter Scott, Prince Regent, and Albion.

The only exhibitors for Mrs. Lloyd Wynne's prizes for Narcissus, and Messrs. Barr & Sugden's special prizes for the same flower, were Miss Florence Barr and Mr. Rudolph Barr, Lower Tooting, and Mr. Ware, Tottenham.

The first prize for six pots of Mignonette was awarded to Mr. R. Laing, gardener to C. Flower, Esq., Tooting Common, for large specimens trained in the pyramidal form, and pretty well flowered. Mr. J. Goddard, gardener to A. Chancellor, Esq., The Retreat, Richmond, is second. For three standards Mr. Laing, the only exhibitor, was awarded the first prize for well-grown plants.

In Class 16, twelve Golden Tricolor Pelargoniums, distinct,

nurserymen, Mr. Pestridge, Greenway Nursery, Uxbridge, is first with neat moderately-sized specimens, of which Mrs. Turner, Mrs. Headly, Salamander, Lady Cullum, and Peter Grieve are well coloured. Mr. H. B. Smith, Ealing Dean Nursery, Ealing, is second. Achievement in this collection is very highly coloured.

In the next class, for six Golden Tricolors, amateurs, Mr. G. Goddard, gardener to H. Little, Esq., Twickenham, is first, and deservedly so. Ealing Rival, Mrs. Turner, and Mr. Rutter are very rich and beautiful. The second prize went to Mr. R. Watson, gardener to T. H. Bryant, Esq., Airlie Lodge, Surbiton Hill.

For six Silver Tricolor Pelargoniums Mr. T. Pestridge is again first with neat specimens, but March is too early to see this section in good colour. Lass o' Gowrie and Mrs. Rousby, however, are very pretty. Mr. H. B. Smith again came in second. In the amateurs' class Mr. R. Watson is first, and Mr. G. Goddard second.

For Apples, both dessert and kitchen, separate classes were apportioned. Of the former the best three dishes come from Mr. F. Rutland, gardener to the Duke of Richmond, Goodwood Park, who has excellent samples of Adams' Pearmain, Nonpareil Russet, and Cockle Pippin. Mr. S. E. Ford, gardener to W. E. Hubbard, Esq., Leonardslee, Horsham, is second with Court-pendu-Plat, beautifully coloured, Cockle Pippin, and London Pippin. For kitchen kinds the same two exhibitors occupy the same relative positions in the prize list, Mr. Rutland having Blenheim Pippin, splendid, Lincolnshire Reinette, and Royal Russet. Mr. Ford is second; and Mr. Gardiner, Lower Ealington Park Gardens, sends, among others, large and well-preserved fruit of Hanwell Souring.

For three heads of Broccoli Mr. Perkins, Regent Street, Leamington, is first with Leamington Broccoli, with very close and white heads. Mr. Farrow, gardener to G. Batters, Esq., Enfield, took the second prize.

Of exhibitions in the miscellaneous class foremost must be mentioned the magnificent group of Hyacinths (about one hundred), Tulips, and Narcissus from Messrs. Veitch. Of these it is impossible to speak too highly. Had they been in competition in classes with plants of their kind, there would have been a first prize for each of the three subjects. Being, however, exhibited as a group, all that could be done was to give them an extra prize. Messrs. Standish & Co., of Ascot, have a like award for a group of Azaleas, Lily of the Valley, Spiraea japonica, and other plants, together with cut blooms of Roses; Messrs. Lane & Son, Great Berkhamstead, for a fine group of Camellias; Mr. William Paul, Waltham Cross, for a fine collection of many varieties of the same flower, and cut blooms of Camellias and Roses; Messrs. Rollisson, Tooting, for a group of Orchids, Palms, and other plants; Mr. Williams, for a group of Camellias, Azaleas, Amaryllids, a fine plant of Trichopilia suavis, and a large pan of Todea superba; Mr. Aldous, florist, Gloucester Road, South Kensington, for a neat group of plants; Mr. Ware for a group of spring-flowering and ornamental-foliaged plants; and Mr. J. Cranston, King's Acre Nurseries, Hereford, for two boxes of superb blooms of Maréchal Niel Rose. Lastly, Mr. Bull, of Chelsea, had also an extra prize for a striking group of Cycads. Among these we particularly noticed *Encephalartos lanuginosus*, *brachypterus*, and *regalis*, the last named receiving a first-class certificate; *Cycas lucida*; *Macrozamia eburnea*, *pulchra*, *elegantissima*, and *amabilis*. Several of these were very beautiful, and were remarkable for the great size of their root-stocks.

FRUIT COMMITTEE.—Mr. G. F. Wilson, F.R.S., in the chair. Mr. F. Perkins, of Leamington, sent specimens of his Leamington Broccoli, a variety exhibited at one of the meetings last spring. It is a very late and apparently a very desirable variety; but as the winter has been so mild, and so many varieties being at present in use, it was thought that the Leamington would be in finer state in the end of April, and Mr. Perkins was requested to send it again. Mr. H. Miles, gardener to James Johnstone, Esq., Ranelagh House, Fulham, sent a plant of Loquat in fruit, for which a letter of thanks was to be sent. Mr. Gardiner, gardener, Lower Ealington Park, sent a large collection of dessert and kitchen Apples remarkably correctly named, and a letter of thanks was awarded. Mr. Macfarlane, of Glasgow, sent his patent Powder-distributor, which has been tried in the garden at Chiswick.

FLORAL COMMITTEE.—Mr. J. Fraser in the chair. Mr. Denning, gardener to Lord Lonsborough, Norbiton, sent a beautiful group of Orchids, which received a cultural certificate. A fine variety of *Odontoglossum Andersonianum* had a first-class certificate, as also one of *Odontoglossum hystrix*. In the same group were several handsome *Cattleyas*, *Lycastes*, fine specimens of *Odontoglossum crispum*, *Vanda gigantea*, *Odontoglossum Hallii*, and *Cymbidium eburneum*. Mr. Richards, gardener to Baron Rothschild, Gunnersbury, had a similar award for an extremely fine specimen of *Odontoglossum Phalenopsis*, with upwards of thirty flowers of large size. Mr. Coles, gar-

dener to A. Smee, Esq., sent a large and handsome plant of *Dendrobium densiflorum*, producing an abundance of its rich orange drooping racemes.

Mr. A. Waterer, nurseryman, Knap Hill, had a first-class certificate for *Erica vulgaris cuprea*, a variety of the common hardy Heath, which was exhibited as suitable for winter bedding, for it changes its colour in October, and it was stated it retains its crimson-coppery hue for six months. As exhibited, the plant had a charming appearance both as regards its colour and beauty of form. From Mr. Williams, Holloway, came two *Hippeastrums*, one of which, named *Burtonii*, was of a fine bright red. Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, sent *Hyacinth Prince of Wales*, single, of a beautiful violet blue, much of the same shade of colour as General Lauriston, but with a finer spike. This received and well deserved a first-class certificate. *Prince of Wales*, a very good single red, rose, with a deeper rose band along the centre of each segment, was also shown by Mr. Douglas, and is good in spike and bells; and though the latter are not large, they make up for that by the closeness with which they are packed. Messrs. Cutbush had also a first-class certificate for Lord Melville, indigo blue with a white eye—a telling kind, which, though it is already in commerce, has not been certificated. To Messrs. Veitch a first-class certificate was awarded for *Hyacinth Massini*, noticed in a previous part of our report.

Mr. Miller, gardener to J. Johnstone, Esq., Fulham, sent a specimen of *Angrecum eburneum*; and Mr. Moore, gardener to C. Leach, Esq., Clapham Common, had a first-class certificate for *Epidendrum erubescens*, with lilac flowers. Mr. Young, Milford Nurseries, Godalming, had a first-class certificate for *Aucuba Youngii* in fruit, a handsome green-leaved kind. Mr. Perkins, Leamington, sent a pretty white *Clematis*; Mr. E. Bland, gardener to Earl Kilmorey, Isleworth, new *Cinerarias*; Messrs. Carter & Co., *Amorphophallus Rivieri*, a species noticed in our last report as being shown with spathe and spadix by Mr. Bull; also *Anactochilus Orgiesii*. Messrs. Downie, Laird, & Laing sent several new *Hyacinths*; G. F. Wilson, Esq., *Primula denticulata*, a hardy Himalayan *Primrose*, and a charming plant for rockwork; and Mr. Lee, market gardener, Clevedon, the large and fine sweet-scented Violet, called *Victoria Regina*, to the most striking qualities of which attention is directed at page 242.

RUSSIAN VIOLETS.

Now is the time to make fresh beds of Russian Violets, the few young leaves which have already made their appearance being certain signs of the rapid growth to follow as the days lengthen. By immediately planting the offsets or side shoots which are now to be found bristling with rootlets, and in large quantities upon the plants just passing out of the flowering stage, a considerable saving of labour is effected, hardly any further attention being necessary till summer. But if the beds are not made till late in April or May, when the young growth is in full activity and the crowded foliage has become drawn into a long and slender growth, much care will be necessary in watering and shading to preserve them from the sun's rays, which will then very quickly prostrate and destroy the young and succulent foliage of plants under their influence that have not a vigorous root action to sustain them. The advantages, then, that are gained by now doing this very easy and simple operation are, that the young and sturdy offsets sustained by the moisture of the soil and cloudy atmosphere so quickly become established plants, that they are in the best possible condition to profit by the frequent showers and brighter skies of the following month; and by being fully exposed on all sides to the air before the spring growth has made much progress, the dwarf, spreading, sturdy tufts present a pleasing contrast to the drawn attenuated appearance of those cuttings which may be taken from the old beds at a later and less suitable period.—EDWARD LUCKHURST.

OBTAINING HYACINTH FLOWERS A SECOND SEASON.

AFTER the *Hyacinths* have done their duty the first year in the greenhouse or conservatory I take them to that part of the garden where the sun shines nearly all day, and plunge the pots to the rim in prepared and well-drained materials, mostly coal ashes. I leave them undisturbed till September or October, according to the time I want them to flower, and then take them up, repotting them carefully in good sandy loam. I have adopted this practice for the last two or three years, and have found it answer well. The bulbs each throw up two or three spikes quite equal to the freshly-imported bulbs;

I have also had bulbs double the size of these. The single varieties succeed the best under this treatment. This season I have had the following beautifully in flower—viz., Prince Albert Victor, Lord Macaulay, Leonidas, Baron Humboldt, Voltaire, Alida Jacoba, Victor Hugo, Norma, L'Ornement de la Nature, Mont Blanc, with many others having spikes from 6 inches to 8 inches in length.—E. C. Hiscox, *Lee, Kent*.

THE AURICULA TO THE FRONT.

Will the growers and lovers of the Auricula far and wide give their hearty and substantial support to a movement which will be inaugurated at the spring show of the Manchester Botanical Society, April 22nd, in favour of this flower?

The Society offer us every encouragement for holding a first-rate general exhibition of the Auricula in conjunction with their Show. They will grant the free use of the Town Hall, and the generous donation of £10 towards the prizes. If those interested in the Auricula will now come forward and take up the matter with downright good will, we may entertain a hope of continued support from the Botanical Society, and may found an exhibition, suited to both small and large growers, which all may regard with pride. My name has been given in as Honorary Secretary, and I am anxious to hear as soon as possible from those who will be exhibitors, subscribers, or both. I therefore invite communications from friends of the Auricula not known to me. Let us try to establish some such united show for the Auricula as we already have for the Tulip in our Royal National Tulip Society, a most flourishing and influential institution, whose prizes are sharply contested and highly esteemed, and which has been the means in a great degree of raising the standard of the Tulip till flowers are now grown which leave "the Dutch" far behind, and many of our old flowers too.

If the Auricula is to be better known and more grown, it must be brought forward in this public manner; we growers are few and scattered, our flowers little known beyond ourselves. I should, indeed, grow all mine just as lovingly if never another eye than mine enjoyed them; but then this seclusion is bad for the flowers—it lessens their chances of finding extended cultivation, continued improvements, and successors to ourselves.

Truly sorry am I for the many sincere lovers of flowers who are unacquainted with the calm, unsatiating, incomparable beauty of the Auricula. What other flower has her contrasts of emerald, ebony, crimson, violet, and rich brown, and many a shade between, that are worked in edge and circle round the snow-white eye, pierced by the yellow, sometimes golden tube? I call the Auricula the fairest of our florists' gems, though I have also the Polyanthus, Tulip, Pink, Ranunculus, Rose, Carnation, and Picotee. Yes! I would rather be without the Rose than without the Auricula. There! The Auricula in April brings you a charm and fragrance that belong to the spring, and which are not to be surpassed by all the colouring and scent of lavish flowery June.—F. D. HORNER, *Kirkby Malzeard, Ripon*.

THE PRONUNCIATION OF GLADIOLUS.

In the extract you gave last week from Mr. Dombrain's treatise on the Gladiolus he is represented as saying, "by right it ought to be, I think, Glädiölus, all short, as if spelt Gladjolus, and the one which it, I suppose, retains is the worst of the three, Gladiöus."

As there is no rule to guide us but analogy in such cases as this, permit me to ask Mr. Dombrain how he would pronounce balölus, filiölus, unciöla, and alveölus? If, as I presume, he would say balölus, filiölus, and unciöla, why not Glädiölus? If not, then Mr. Dombrain must consider that Juvenal and Plautus were wrong.—P. D.

FLOWERS FOR OUR BORDERS.—No. 2.

TORENIA ASIATICA.—ASIATIC TORENIA.

This lovely plant when first introduced was supposed to require stove treatment, but fortunately, although the plant needs a warm atmosphere in the winter season, it will, during the summer months, bear a considerable reduction of temperature below that originally believed to be necessary for its healthy condition, growing luxuriantly in the greenhouse, or the window of an ordinary apartment, and, under certain conditions, in the open air.

As its specific name implies, it is a native of Asia, "growing

throughout Bengal, in Amboyna, Ceylon, Merqui, Chittagong, Sylhet, on the Madras Peninsula, and it is also widely diffused in alpine regions." By some writers it is said to be an annual plant; but as it may certainly be preserved, in a proper temperature, one or two winters at least, this designation can hardly be correct; though it may be raised from seeds, and treated as an annual.

Its pale-green serrated foliage is not devoid of interest, but its chief attraction resides in its charming violet flowers, which are produced profusely through the summer months up to a very late period; they are of that peculiar rich velvety tint which the pencil of the most skilful artist is inadequate to imitate successfully (for "who can paint like nature?") especially in the two lateral lobes of the corolla, where it is most intense; after the flower has been some days expanded, it loses a little of its depth, particularly if exposed to strong sunshine.



Torenia asiatica

The young botanist will be interested in observing the stamens, which, as in nearly all the Figworts—to which order our plant belongs—are didynamous, or in two pairs, one of which is considerably longer than the other; in both pairs the filaments are so curved as to bring into contact the one-celled anthers, which adhere closely to each other; and at the base of the two longest stamens will be found an appendage, differing but in length from the filament itself, and which is one of the distinguishing marks of the genus *Torenia*. The stigma is divided into two flat lobes or lips, as in the different species of *Mimulus*, and exhibits the same curious sensibility to touch, closing when irritated, as is seen in that genus; this fact appears to have hitherto escaped the notice of botanists. Many of the Figworts have round stems, but in *Torenia* it is four-angled.

It is of the easiest possible propagation, cuttings 2 or 3 inches long, planted under a glass in a pot of light, moist soil, and placed upon a warm window, rooting with even greater readiness than the well known *Cuphea platycentra*, which is one of the quickest-rooting plants with which we are acquainted. The plant affects a vegetable soil, and will do well in a mixture of peat or leaf mould and sandy loam, with well-drained pots of moderate size.

When grown as a window plant, it is best trained upon a flat trellis, which, from its rapid growth, it will speedily cover; and to induce its lateral extension, the extremity of the shoots should be frequently pinched off; or the pot may be suspended, and the branches allowed to trail downwards, in which position the elegant habit of the plant, combined with its lovely blossoms, renders it a highly interesting object. We are inclined to believe that, during the summer months, this plant

may be cultivated as successfully at an ordinary window as in the best greenhouse, as it will there enjoy a greater amount of shade, and the duration of the flowers be proportionately prolonged.

We have hinted at the possibility of its employment as a bedding plant, but we are unable to offer any observations as the result of personal experience. It has been stated, apparently on good authority, that the plant will endure the open air in our climate in summer, and in the southern counties it might probably succeed, but we doubt whether the experiment would be successful far north of London.

When the tropical character of its native regions is considered, it will excite no surprise that it should require some care for its preservation during the cold months of our winter; but we think that, in an apartment in which the temperature does not descend much below 50°, no difficulty will be found in keeping it alive, provided that it is not too frequently watered.

The genus *Torenia* commemorates the name of Olof Torenia, a Swedish botanist of some eminence. About six other species have been introduced, one of which, *T. scabra*, a plant well known to gardeners, may be cultivated as a half-hardy annual. *T. concolor*, introduced a year or two before Asiatica, is an interesting species, the flowers of which are entirely of a deep bluish purple, and coming from Hong Kong, it is rather more hardy than *Torenia asiatica*.—(W. THOMPSON'S *English Flower Garden*.)

NOTES AND GLEANINGS.

MR. GEORGE LEE, of Clevedon, has sent us some noble flowers of that splendid SWEET-SCENTED VIOLET *VICTORIA REGINA*, and a number of seedlings raised from it varying very much in character. If Mr. Lee persevere in thus improving the sweet-scented Violet, we may expect to see varieties rivalling in size the florists' Pansy.

Two fine plants, both from Moreton Bay, are at present objects of interest at Kew. The tree of *ARAUCARIA BIDWILLI*, in the temperate house, has produced cones for the first time in Europe. It was one of the two original plants brought to this country in 1842 by Mr. Bidwill, the other having been purchased for one hundred guineas by the Duke of Northumberland. The Kew tree is about 26 feet high, and its branches cover a circumference of about 60 feet. The seeds are very important articles of food to the aboriginal inhabitants, and the property of the tribes in individual trees of the Bunyabunya is the only possession they have, and is the commencement of a communal system amongst them. *DENDROBIUM HILLII* is the principal feature in the Orchid house. The large mass in flower has as many as twenty pale yellow racemes, some being as much as 2 feet in length.—(Nature.)

In the last two months the declared value of POTATOES imported was £544,639, and in the same period of 1872 only £35,963. Last month the value was £262,330, against £19,976 in the month of February, 1872.

We have the pleasure to call the attention of our readers to the publication of "VAN HOUTTE'S POMONA, a descriptive list of fruits, with numerous plates." This contains short descriptions of 431 Pears, and is illustrated by five sheets of coloured figures of Pears and six of outlines. The coloured figures are beautifully executed portraits of the varieties represented.

ROYAL HORTICULTURAL SOCIETY.

THE Council have summoned a Special General Meeting of the Society, to be held in the Council-room at South Kensington on Wednesday, the 26th March, at three o'clock, for the purpose of confirming the following new Bye-Laws which have been approved of by the Council of the Society at a Meeting held by them on the 11th inst.

"1. The existing Bye-Laws of the Society numbered 63 and 82 are hereby revoked and repealed, and the following Bye-Laws are substituted in the place of them.

"2. Every Fellow of the Society shall be entitled to appoint, by written proxy in the form marked D in the Appendix to the existing Bye-Laws, any gentleman, being a Fellow of the Society, to vote for him or her at all or any General Meetings of the Society.

"3. Any Member or Members of the Council may resign his or their seat or seats by sending a written notice to that effect, addressed to the Secretary of the Society; and every vacancy in the Council by resignation under this Bye-Law shall be filled up by the other Members of the Council, if less than half of them resign at any time, and by the Fellows of the Society at a General

Meeting, if the Members of the Council resigning are half or more than half of the whole body; and if half or more of the Members of the Council resign at any one time, a General Meeting of the Fellows shall be called so soon as conveniently may be after such resignation, in order to supply the places of the resigning Members of the Council; and until such General Meeting shall have been held the resigning Members shall continue Members of the Council, and shall be capable to act as such."

The above has been communicated to each Fellow by post accompanied by this statement:—

"The above Bye-Laws have been prepared to enable the present Council to resign in a body, in consequence of the adverse vote of the General Meeting on the 18th ult., on the adoption of the Annual Report of the Council.

"The paragraph on which this adverse vote was carried was as follows:—'The Council, looking to the position of matters and the necessity of circumstances, are satisfied that their policy in this respect was wise and ought to be persisted in.' This policy referred to the endeavours of the Council to work harmoniously with H.M. Commissioners.

"The following reasons induced the Council to adopt the policy alluded to.

"The Council have had two great sources of anxiety pressing upon them—viz., the Debenture debt of £49,700, and the uncertainty of being able to retain the lease of the Gardens.

"The original Debenture debt of £50,000 was incurred in making the Gardens. The Commissioners spent at the same time a similar amount in building the Arcades which surround them.

"By the terms of the agreement, after the expenses of the Gardens and the interest on the Debentures have been satisfied, the Society has to pay to the Commissioners yearly, by way of rent, all the surplus receipts from the Gardens up to £2400. If after these payments have been made there remains a balance, the profits are to be equally divided between the parties.

"The Society are also bound to devote annually three-fifths of their share of these profits to a Sinking Fund for the redemption of the Debenture debt.

"It is further provided that should the receipts from the Gardens be paid to the Commissioners as rent fail for five consecutive years to amount in any one year to £2400, the lease should be at an end without notice. Should, however, the total sum (in rent and profits) paid to the Commissioners amount to an average of £2400 a-year from the commencement of the term, the lease remains in force.

"These three important facts as respects the working of this agreement, and the present wishes of H.M. Commissioners that the visitors to the Exhibition should have the privilege of entering the Gardens, had much weight with the Council:

"1. The Society has only twice paid its rent to the Commissioners—viz., in 1862 and in 1871, and in both instances the payment was made through the assistance of the Exhibitions.

"2. The Society has only been able to pay off £300 of the Debenture debt, and that was paid in one of the Exhibition years—viz., 1862.

"3. The division of profits under the terms of the lease makes the Commissioners and the Society virtually partners.

"The terms offered by H.M. Commissioners, and under negotiation with the Council when the Annual Meeting took place, doubtless entailed some sacrifices on the part of the Members, and especially upon that section of the Society dwelling near the Gardens. These terms would:

"1st—Have made ample provision for carrying out the proper object of the Society—viz., the encouragement of Horticulture.

"2nd—Have enabled the Society to remain in possession of the Gardens without risk of forfeiting the lease, and virtually without payment of rental.

"3rd—Have provided the means of liquidating the Debenture debt—a debt which every Fellow must feel desirous to have extinguished: and

"4th—Have met the reasonable wishes of their partners, the Commissioners, in a spirit of equity.

"For these reasons the Council still consider that the policy 'was wise and ought to be persisted in.'"

At a meeting of the Sub-Committee of the Horticultural Defence Committee, held on Monday last, it was resolved to recommend the Committees to support the Council at the Special General Meeting to be held on the 26th inst., in their endeavour to pass the Bye-Laws Nos. 2 and 3, enabling all Fellows of the Society to vote by proxy, and making provision for the resignation of Council.

ESTIMATED VALUE OF SOOT.—A genuine economist claims that one of the best fertilisers, going constantly to waste, is

soot. "It is as valuable as guano, and should be carefully saved at least twice a-year. You will find soot contains a large amount of ammonia, and on this account it is very beneficial to nearly all kinds of plants. Apply it to the soil about the roots, and not to the leaves or stems; or twelve quarts of soot dissolved in a hogshead of water make an excellent liquid manure."

EXTRACTS FROM AGRICULTURAL RETURNS OF GREAT BRITAIN.

With respect to land used for orchards or for fruit trees of any kind, the returns obtained in 1872 differ to some extent from those published for the previous year. The addition to the forms for the returns of 1872 of columns for market gardens and nursery gardens, led to the discovery that land had been wrongly described as orchards in 1871, and the returns under this head in 1872 of 156,000 acres for England, 10,000 for Wales, and 3000 for Scotland may be considered as more accurate than the acreage returned for the first time for orchards in 1871. Acreage of Potatoes in Great Britain in 1868, 541,543; in 1869, 585,211; in 1870, 587,661; in 1871, 627,691; in 1872, 564,088. Acreage of orchards, &c., in England, 156,007; market gardens, 32,937; nursery gardens, 8906; woods, 1,325,765. Orchards, &c., in Wales, 10,680; market gardens, 850; nursery gardens, 790; woods, 126,823. Orchards, &c., in Scotland, 3121; market gardens, 2417; nursery gardens, 2083; woods, 734,490.

PLANT SHELTER.

As spring approaches, and space in glass structures of all kinds daily increases in value, it is desirable that every means of shelter and protection should be turned to advantage. In hardly any garden establishment are there enough spare pits or frames for all the exigencies of this busy season; it follows, therefore, that most persons having the care of a garden have to adopt or contrive certain rough-and-ready means of protecting many plants that are not sufficiently hardy to bear full exposure to the air. With this, as with many others of the affairs of life, it is more frequently the man who labours under the greatest disadvantages, and whose wits become sharpened in doing battle with the difficulties he is called upon to encounter, who succeeds the best.

Of the numerous appliances that may be included under the category of plant-protectors there are many admirably adapted to the purpose. It is not, however, my purpose now to enter upon a comparison of such things, valuable as they undoubtedly are, but rather to deal with such makeshifts as all are more or less acquainted with. Among those which occur to me as I write, I can remember nothing more useful than a few spare glass lights, provided for no special purpose, but kept in store as a sort of reserve force. No garden should be without some of these of a light useful size, so that they may be easily lifted about and removed from place to place as occasion may require. Given the lights and a few rough planks, a handy man will soon contrive a snug shelter for bedding plants, spent bulbs, plants which, having been forced early, require rest, and Strawberry plants. Then, too, they may be made to play an important part in forwarding early crops of Potatoes, Carrots, Celery, Lettuce, Radishes, Asparagus, Beans, and Strawberries; also in winter they will be found useful in sheltering Parsley, salading, and Spinach from frost and snow—not, perhaps, so much for the sake of protection as for the facility of keeping up a steady and constant supply for the kitchen.

Common hurdles or wooden frames form excellent screens when closely thatched with straw, heather, rushes, reeds, or, in fact, any material adapted for the exclusion of cold air or cutting winds. Similar materials may also be used to form sides instead of planks, or trenches of a depth proportionate to the height of the plants answer very well, care being taken to cover the bottom with ashes or rubble for the plants to stand upon, in order that water may escape from the pots freely, and to exclude worms.

Turf is not often to be had, but there is nothing better to make temporary pits with, especially when neatness is an object of importance, as it should be in all gardens. By cutting the turves in square-edged pieces, the walls may be built with as much accuracy as if of brick; and after serving for such a purpose the turf becomes so sweetened and mellowed, that when chopped down with spades it is reduced to a very desirable soil for pot plants.

There are three things from which it is highly necessary to guard plants requiring such protection—frost, heavy rain, and cold cutting winds. A sloping covering will serve to prevent injury from rain, but it is the action of wind which is especially hurtful, and is yet frequently less guarded against than other evils. The keen March winds, as they sweep over the land, search every crevice, literally cutting like a knife wherever they penetrate, and many instances might be adduced of valuable plants suffering the loss of foliage from this cause. It is very necessary, therefore, to use every precaution that no loophole is left by which this insidious enemy may enter, especially upon the east and north sides.

Hedges of *Thuja Warreana*, Box, Holly, *Thunopsis borealis*, Yew, or Privet form admirable compact screens to check and break the force of high and cutting winds. This should be especially remembered in laying out new gardens, for such shelter, valuable as it is at all times, is doubly so in winter and spring.—EDWARD LUCKHURST.

NEW BOOK.

Handy Book of Fruit Culture under Glass. By DAVID THOMSON. Edinburgh: Blackwood & Son.

WITH the exception of old John Abercrombie and Walter Nicol, two stout old Scotch gardeners of the last century, we do not remember the name of any other of the numerous writers on gardening who have produced a book on forcing. Separate and specific treatises on the Cucumber, the Melon, the Pine-Apple, and the Vine are frequent, but a comprehensive treatment of the subject of forcing is reserved to these old worthies in the past, and to another of our northern brethren not less worthy of the present day.

It is satisfactory to see work done by those who are competent for the task they undertake. This competency can only be acquired by practice, and if any person has had the practice necessary to make him proficient in his art, it is the author of the work before us. To commend the work it is not needful, for Mr. Thomson is so well known as a gardener of the highest order, and a writer at once simple, succinct, and intelligible, that our readers may rest assured that nothing will escape from his pen that is not for the benefit of those for whom it is intended.

This treatise on fruit culture under glass is not so comprehensive as its title implies. In these days of cheap glass there are many more fruits now grown under its shelter than Mr. Thomson has treated of. The Cherry, for instance, he omits, but those of which he has written, which are the Pine-Apple, the Grape Vine, the Peach and Nectarine, the Fig, the Melon, the Strawberry, and the Cucumber, are handled in such a way as to leave nothing to be desired.

It is not only the culture of the fruits which has engaged the author's attention, but such subjects as the insects to whose attacks they are liable, and the packing of fruit for transmission, are not omitted. The following extract may be useful:—

"PACKING GRAPES.—The packing of Grapes to be sent long distances by rail and other conveyances requires to be carefully managed. There are many ways of packing them. I have seen each bunch laid on a thick stiff sheet of paper, and folded up sufficiently tight to prevent the bunch from moving about in the paper. They are then packed closely in boxes sufficiently deep to admit a layer of paper-shavings under and over them, so that when the lid of the box is fastened down each parcel was held securely in its place. The stiffness of the paper is supposed to come in contact with the bunch at several points than when wrapped-up in more flexible paper, and on that account to better preserve the bloom. There is, however, at the same time, room left for the oscillation of those berries not in immediate contact with the paper, and this is objectionable. In sending Grapes to a distance I have never adopted this mode of packing, but have either wrapped each bunch in a sheet of fine tissue paper, and packed them on a firm bed of paper-shavings as close as they would lie, with just sufficient wadding between each to fill up the irregularities of the outline of the bunches. When the box is thus filled, a sheet of wadding is spread regularly over the bunches, and over all a layer of paper-shavings; so that when the lid is shut down they are subject to as much pressure as prevents their moving. At other times, when only sending a few bunches in one compartment of a box, I have spread a sheet of paper over the shavings in the bottom of the box, and laid all the bunches as nicely fitted into each other as possible on it, then put another sheet of tissue-paper over them, then some cotton wadding, finishing off with a layer of paper-shavings. In this way I have always found them go quite

safely. When a quantity has to be sent in one box it should be divided into compartments, so that when the box happens to be set down, standing on end or side, the Grapes at the lower part of it cannot possibly be subject to much pressure from the top end of the box. I do not know of any way of sending them to preserve their bloom, for unless some person is sent with the box there must be packing material on the upper side of the Grapes."

We can recommend this work very highly to all who are engaged in fruit culture under glass as a thoroughly practical and reliable guide.

STRATFIELD SAYE.—No. 2.

THE SEAT OF THE DUKE OF WELLINGTON.

In the previous notice (p. 227) we left off with the view of the east side of the house, and we commence this with a representation of a group of magnificent Cedars in the pleasure grounds to the north. The largest of these trees towers up to a height of 109 feet, and has a stem 15 feet in girth at a foot from the ground. In consequence of having been planted so closely together they have assumed more the character of the Scotch Fir than of the Cedar, several of them having trunks without a branch until a height of at least 60 feet is reached; and with the play of the bright sunshine upon them they had a lighter and more airy character, and some of them, at all events, apparently a more silvery hue than this sombre tree usually presents. The group referred to is a feature of which mere description would fail to give a just idea, and we have, therefore, availed ourselves of a photographic view by Mr. G. H. Hay, of Hanover Place, Upper Baker Street. Associated with the Cedars are several fine Silver Firs, ranging from 100 to 120 feet in height, with stems from 12 to 17 feet in circumference. Passing from this group eastwards between clumps of Rhododendrons and thriving young Conifers, we reach an immense old Oak, the greater part of which is dead and covered with Ivy. Being on a mound of considerable elevation, it forms a striking object, and is a great favourite with the Duke. Near this is a fine Wellingtonia, forming a perfect cone 21 feet in diameter at the base, and 34 feet in height. It is always interesting to note the dimensions of large trees as well as of those which have been but a few years introduced into the country; and that the "great tree" named after the "great Duke" has thriven well at Stratfieldsaye may be inferred from the fact that its stem is 9 feet 6 inches in circumference at the base, and 5 feet 4 inches at 6 feet from the ground. It was planted in 1857, about three years after the introduction of the tree into this country.

A few yards to the right of the Wellingtonia is a fine old Hemlock Spruce about 70 feet in height, with branches spreading over a circle of some 35 feet in diameter, and a stem 12 feet in girth at the base. There is also near this a handsome tree of *Abies orientalis* about 34 feet high. Approaching nearer to the mansion we find three remarkable Scotch Firs, which had evidently been headed-down when young, as a whole forest of trunks have sprung upwards at about 6 feet from the ground. On one of the trees we counted thirteen of these stem-like branches, some of which had, besides, in-arched themselves naturally in several places. A very old Weymouth Pine next demands attention; pressed on the north side by large deciduous trees, it has extended its huge branches southward to the distance of 40 feet, and has attained a height of 80 feet, whilst its girth of stem at the base is about 19 feet. After passing a fine specimen of a silvery variety of the Cedar of Lebanon, among a large group of Beeches, Oaks, Chestnuts, and Tulip Trees, we come to a *Pinus Pinaster* 90 feet in height, with a stem 12 feet in circumference. Proceeding towards the house we pass on the left some fine specimens of deciduous trees, and among them *Nyssa aquatica*, *L.*, a pendulous tree rarely seen in our pleasure grounds, although it has long been in the country, having been introduced before the middle of the eighteenth century from the southern states of America. The tree at Stratfieldsaye is 65 feet high, with a stem nearly 5 feet in circumference, and in autumn its pea-green leaves die off to such a beautiful crimson, that it has been compared to a column of flame.

In the park, which is of great extent, there are numerous large Oaks, Elms, and old Yews and White Thorns, besides a number of thriving young Pinuses and Cedars. *Abies Menziesii* and *Picea Pinsapo* are thriving well, and there are fine groups of Silver Firs, while Spruce of great size and perfectly sound to the core is very abundant. Indeed, the park is much over-timbered, and would be improved by the judicious use of

the axe, as, owing to the trees being so large and crowded, its real extent is not perceived.

From the main avenue another leads to the Reading and Southampton road. This is planted with thriving Wellingtonias three or four years old, and outside the lodge at its termination is a lofty and handsome monument in honour of the first Duke. It is of polished Cornish granite, was designed by Baron Marochetti, and bears this inscription—

"Erected by Arthur Richard, second Duke of Wellington, and by the tenants, servants, and labourers on the estate of his Father, as a token of their affection and respect. 1863."

Opposite each corner of the base of this Mr. Bell, the gardener, has appropriately planted a Wellingtonia at a sufficient distance to allow it to attain its natural gigantic proportions.

The kitchen garden, as already stated, is situated close to the mansion, though well concealed, but everything about it was so clean and neat that little concealment was necessary. The space within the walls is some 3½ acres, but there is also nearly an equal extent outside as orchard, herb beds, and for propagating purposes. Among the houses was a Peach house 60 feet by 12, well adapted for early forcing, the roof being at an angle of 60°, and therefore admitting more direct sun light at this time of the year than flatter-roofed structures. The trees—Bellegarde, Royal George, and Violette Hative, are trained to a wire trellis 15 inches from the glass, and are bearing an excellent crop. As in other houses, the shelves at the back were fully occupied by Strawberries, Geraniums, and bedding plants. The next house is a late vinery, 40 feet by 16, planted with Lady Downe's Vines; and between this and the early vinery, of like dimensions, planted with Black Hamburgs, which promise to bear a good crop, is a ridge-and-furrow greenhouse, containing an excellent show of Camellias, Cyclamens, and spring flowers. Following the early vinery is that for succession, in which the Black Hamburg and Buckland Sweetwater Vines were just breaking. Next come four ranges of span-roofed pits, three of which are chiefly devoted to Pine Apples. Three and four-inch pipes are used for supplying the top heat, but for bottom heat leaves alone, and of these the woods must afford no lack. In the fruiting house, a three-quarter span, we noticed a remarkably healthy lot of Queens and Smooth-leaved Cayenne in 11-inch pots, and some of them were ripening fine fruit. Mr. Bell considers pots larger than 11 inches not desirable for general purposes. After just glancing at a range of forcing pits 60 feet in length, containing satisfactory crops of Asparagus, Potatoes, Kidney Beans, and young bedding plants, we came to a span-roofed house partly employed for forcing, but in other compartments principally filled with Orchids, Dracenas, Crotons, Alocasias, and various fine-foliated plants. There is also a collection of Ferns, and to the roof of one compartment is trained a pot plant of *Bougainvillea glabra*, which is seldom out of flower.

On the south side of one of the vineries is a range of low pits or frames 12 feet wide, heated by a 6-inch pipe passing all round. In these, Peaches trained on flat trellises a foot from the ground and 2 feet from the glass, were in beautiful bloom, and Mr. Bell informed us that they ripen heavy crops of finely-coloured fruit. The remaining glass structures were a Fig house 60 feet by 12, a Muscat house, and the latest vinery, planted with West's St. Peter's. Mr. Bell having found that the Peach trees on a wall facing the east always bore abundant crops, whilst those on the south-aspect wall frequently failed to do so, although similar care was taken in both cases, was for some time at a loss to account for the circumstance, naturally considering that the trees on the warmer aspect ought to succeed best, but he remembered that the east wall (12 feet high) had a broad projecting coping, while the south wall (only 10 feet high) had one projecting but 1½ inch beyond the face of the brickwork; he

was therefore having irons bent in this fashion [] inserted into the south wall to support temporary copings of boards till the spring frosts are over; and near the upper angle of the iron he has had an eye-hole made, through which stout iron wire can be threaded for the support of curtains in front, to be drawn on or off as needed. We have no doubt this simple and inexpensive contrivance will answer well, and that, except in a very exceptional year indeed, he will not have to complain of want of crop. The Apricot wall facing south has an 8-inch coping, which proves a great protection. Along the sides of the principal walks in the kitchen garden are old espalier Apple and Pear trees, which prove very serviceable in any year, and in the past season bore fruit when that from

younger trees was entirely cut off. It may here be mentioned that the Ramie Grass, *Urtica* or *Boehmeria tenacissima*, is cultivated with great success by the Duke, who takes much interest in this member of the Nettle family, and not without reason, for he has succeeded in extracting from home-grown plants a fine, beautifully white, and extremely tenacious fibre, which will be exceedingly valuable for textile and other purposes.

In a paddock adjoining the kitchen garden Copenhagen, the horse which the first Duke rode at Waterloo for fifteen hours without dismounting, spent in peace the remainder of his existence, and there he is buried, in a railed-round enclosure, under three Evergreen Cypresses and a Turkey Oak. He was not more than four or five years old at the time of the battle, and lived till about 1838.

On quitting the kitchen garden we passed through a dense

Yew hedge some 12 feet high, and then into the American garden, which is neatly laid out with clumps of Rhododendrons, Azaleas, and Kalmias, and very effective in the early summer when the plants are in bloom. The main feature, however, here is four fine specimens of *Araucaria imbricata*, the largest of which is about 33 feet high. Three out of the four have flowered, and two female trees have produced cones with perfect seeds, which have vegetated freely. One of the female trees is 180 yards from the male, but having been artificially fertilised, it has matured seeds, a process which occupies two years, as plentifully as the tree whose branches interlace those of the male. At the time of our visit the catkins of the latter were just coming out.

We cannot conclude these notes without taking this opportunity of thanking Mr. Bell, under whose care the gardens are,



Group of Cedars at Stratfieldsaye.

for the great trouble which he took in pointing out the features of the place, and it is through his kindness that we have been enabled to give the dimensions of the largest trees from actual

measurement. It is only necessary here to add that the management of the gardens and pleasure grounds amply proved his professional skill.

FORCING BY NATURAL HEAT.

A WRITER in the *Scientific American*, of November 23rd, upon "Scientific and Mechanical Possibilities," says:—Heat increases about one degree to every 50 feet that we penetrate the earth; shafts are now sometimes sunk to a depth of 2000 feet. It is not within the possibility of mechanism to bore 4000 feet more. At that depth we should find a heat of at least 150°, and in many places even greater than this. Mechanical power could be obtained from the steam and water forced up from this depth. Heated water and steam from these wells could be carried into our houses and warm our dwellings to a summer temperature. Conducted in pipes under the soil protected by glass, we could cheaply grow in New England, all of the southern and tropical plants and vegetables. The snow could be kept melted from the streets of New York, and all of the buildings warmed from this spontaneous flow; useful also for cooking and other purposes.

The Garden of Plants in Paris is heated by water from an artesian well 1800 feet deep, which has a temperature of

82° Fah., and is carried in pipes under the soil. A salad garden at Erfurt, in Saxony, is heated in the same manner, and is said to have yielded \$60,000 a year to the proprietor.

That the cost of artesian wells is not too great to grow tropical plants in New England cheaply by heat thus obtained, is not shown. Whether the internal heat of the earth cannot be made available for winter forcing, is a question worthy of careful consideration.

In this locality a uniform temperature of 52° is found at a depth of not more than 20 feet, and probably it would be about the same in the latitude of 42° from this to New England.

It would seem to be among "scientific and mechanical possibilities" to utilise this proximate internal heat in securing to plant structures a proper night temperature, which need not be above 45° for greenhouses—the sun, in bright days, giving a day temperature of 60 to 80 degrees. This, cheaply accomplished, will it not inaugurate a new era in window gar-

dening?—JAMES WEED, *Muscatine, Iowa.*—(*American Gardener's Monthly.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

CLEAN and move the ground between the rows of Lettuce, young Cabbage, autumn-sown Onions, Garlic, Shallots, and other winter-standing crops. Clear the garden of all litter. Roll the walks if they have been loosened during the winter. Make another sowing of *Beans*; the Longpod is a prolific sort, but the Green Windsor has a better appearance when sent to table; earth-up the early crops. Pot young plants of *Capsicums* as soon as fit, and place them in a hotbed-frame; they are very liable to be attacked by the green fly, which should be destroyed immediately it is observed. The weather is now favourable for getting-in the main crop of *Carrots*. The Early Horn is an excellent sort both for early and late use, as it keeps as well as the long sorts, and is much better adapted for many soils. Prick-out the early-sown *Celery* into boxes, or on a slight hotbed; when it has taken root give air at every favourable opportunity. As soon as the frames of *Cucumbers* are uncovered in the morning, give a little air for an hour to let the stagnant air pass off, when they may be closed again till the day is further advanced; if air has been given to the frames all night they may be closed for an hour or two. As soon as the principal shoots have reached the sides of the frame, never allow any of the laterals to grow more than two joints before being stopped. *Jerusalem Artichokes*, if not yet planted no time should be lost in getting them in. Some of the best plants of *Lettuces* that have been wintered in frames may now be put out, some under a south wall and others in a more open situation. If it can be so managed the whole of the beds of *Mushrooms* in one house should be made before any begins bearing. This can be accomplished by making the last bed about six or seven weeks after the first. Sow the main crop of *Onions*. If large ones are required plant the very small bulbs of last year, or the autumn-sown plants in very rich soil; or larger Onions may be grown by the following method:—Well tread the ground, and lay 3 inches of very rotten dung upon it, on this sow the seed, and cover with a little fine earth. Stick the early crops of *Peas* as soon as they are earthed-up; a few small beech boughs with the leaves on may be stuck on each side of the row, this will protect them from frost and cold winds. Make a sowing of *Purslane* on a warm border. Sow a successional crop of *Radishes*; the Turnip-rooted sort may now be sown. *Rhubarb* may now be forwarded by placing a hand-glass over the roots; a little litter should be placed over the bottom of the glass to prevent the ingress of cold. Make a good sowing of the Dwarf Green *Savoy*, which is by far the best for general use. *Salsafy* and *Scorzonera* should be sown in drills at from 9 inches to a foot apart.

FRUIT GARDEN.

Continue pruning and nailing Peach trees, and when they are coming into bloom put up coping-boards and curtains or nets, or, in the absence of these, small beech boughs with the leaves on may be stuck about the trees. Continue regrafting Apple and Pear trees. Securely stake newly-planted standard fruit trees, nothing is more injurious to them than being blown and twisted about by the wind.

FLOWER GARDEN.

The walks should now be turned if required, and the turf edgings mended if necessary. Roll and mow the lawn before the grass grows much, as it can be kept in better order afterwards than if allowed to remain until the end of April or beginning of May. Level-down the beds a little with the Dutch hoe, but do not allow the rake upon them at present. Prune Roses to cause them to flower late. All rubbish thrown upon lawns by tempestuous weather, or otherwise, should be carefully removed before the roller is used. The planting of herbaceous plants should be completed, and the beds they occupy dressed with fresh soil. It is a good practice to defer the operation of pruning Roses which have been recently transplanted until vitality is decidedly manifested in the buds, as in removing a large proportion of young wood the powerful excitement which it undoubtedly offers to the roots in influencing them to action is diminished. Tulips now begin to want warm and fine weather. Where unprotected the late hailstorms have done considerable damage to the foliage, and canker in many places has made its appearance. I hear of several beds in the north having been wholly destroyed, apparently by a disease similar to that which has affected the Potatoes. All beds of any pretension should now be covered with a net, and every attention possible ought to be bestowed upon the growing plants. Pansies will require considerable attention during the present month. Sheltering, cleaning, &c., must be sedulously attended to. Seedlings will be expanding their blossoms, but we would caution the grower not to remove those that are promising. After their good qualities are ascertained, it will be advisable to take off the greater part of the main stem, which will induce the production of laterals; these should be put in and will readily strike root.

If Carnations and Picotees show symptoms of decay carefully remove with a sharp knife the decayed part, especially that portion of the root where the severance from the parent plant took place, also take away any bruised leaves. The general stock should now be potted. Auriculas now require particular watching; they should be kept moderately and regularly moist, not by watering them all at the same time, but only according to the state in which each pot may be; in some pots the soil may retain moisture longer than in others. Should the weather be mild a little light rain would be beneficial, taking care to protect the frames at night.

GREENHOUSE AND CONSERVATORY.

Let the occupants of the conservatory beds and tubs receive a proper degree of that attention which is demanded by all greenhouse plants at this season, especially in regard to the supply of fresh soil and other necessary stimulants to active growth. *Mandevilla snavolens*, the *Kennedias*, *Passifloras*, and *Bigonias* will require regular supplies of water, and possibly a further supply of rich soil. In introducing Roses, Pinks, and other plants from the forcing pit see that they are free from insects. Plants infested within the show house should be removed and fumigated. Shift greenhouse plants as circumstances may render advisable. In some cases an alteration in the period of blooming may be produced by varying the time of potting and proportion of nourishment. Permit no depression of heat in the forcing pit.

STOVE.

Many of the plants can now be propagated with greater success than at any other period, it is impossible to particularise them as they often vary in the time of growth according to the treatment they receive. A knowledge of the time to take off a cutting is the principal art in propagation. Give air at every favourable opportunity.

PITS AND FRAMES.

Many of the established and more hardy plants in these structures may now be removed to temporary pits to make room for the spring-struck stock. Proceed with the potting-off, and do not permit any vacant space in the propagating frame until there are more plants than will be required for bedding-out.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE snow and rains still predominating have confined most of our work to digging and turning ridges, the few frosty mornings affording a good opportunity for such work. With a few fine days the soil will be in a suitable condition for even the finer seeds being sown, and then it will be seen that a little delay will not be time lost.

When the weather was at all dry we took the opportunity to fork gently among a plantation of *Cabbages* which as yet has not lost a plant, and the broad, squat appearance of the plants leads us to hope that there will be no bolters among them. This slight forking lets the air in among the roots, and does away with the hard pan that rain and snow are apt to form on the surface. We shall most likely give the soil between the plants another forking a little deeper if the surface is at all dry, and then in a few days we will draw earth to the plants so as to firm them more, and give them some security against winds when their heads become heavy. In this earthing-up, though placing some earth against the stems, we do not approve of having the ridge sharp like the ridge of a house, but rather of leaving it in the shape of two ridges with the plants in a little trench or valley between. This gives the plants a great advantage as far as the benefit of rains is concerned.

We intend to plant-out immediately a lot of young Cabbage plants kept in beds all the winter, putting them in between Raspberries and Currants, though they would be well worthy of an open space if we could afford it, even if they were all pulled-up by the end of the summer and autumn. We say this last advisedly, for though such spring-planted Cabbages, and even Cabbages and Coleworts planted later will often after being cut yield a good deal of produce in winter, still on the whole for winter and early-spring produce in the second season they will bear no comparison with the autumn-planted Cabbages—that is to say, the Cabbages to which we first referred to, planted-out last autumn, after giving a first, second, or third cutting during the summer and autumn, will yield numbers of small sprouts and young Cabbages all the winter and early spring if the weather be not excessively severe. Few things are better fillbaskets than such an old quarter of Cabbages. We generally keep them until the sprouts from Scotch Kale, &c., come in abundantly, and then the ground is bedded-out for *Celery*.

Lettuce and Endive.—We ran a fine hoe or a fine-pointed fork through rows and beds of Lettuces. Those planted in the orchard house have come-in useful. Of small compact plants of Broad-leaved Endive on a ridge containing five rows, one at the apex, and two at each side, not a plant has been lost in-

dependently of the wet; whilst those on the level, both Broad-leaved and Curled, succumbed to the damp. We covered these plants on the ridge separately with a 5 or 6-inch pot reversed, with the hole of the pot stopped-up. This blanches the plants white in about eight days, and as two or three plants are used the pots are carried and placed over others.

Cauliflowers.—We threw a little dry ashes and charcoal dust among them to keep them from any approach to damping. The mild weather has brought on the most forward till they are quite as large as we wish to see them.

Broccoli.—We examined this frequently to see that no heads were exposed; we also pulled away decayed leaves from them and Winter Greens, and packed the earth more firmly against the stems of Broccoli that were laid, as it is possible with these northerly and easterly winds that we may still have a sharp frost. For forwarding and forcing vegetables, see previous weeks' notices.

FRUIT GARDEN.

For general management of houses, Strawberries, &c., we must refer to former numbers. Sowed Melons, as we did not care to have them early, also Cucumbers for succession. Some we planted in winter, to afford a succession after the late ones, did little good in the dark days, and were just kept moving, but have grown well since the days lengthened, are bearing a few fruit, and most likely will render part at least of our sowing unnecessary.

Our chief work for the week has been in the *orchard houses*, as we were forced to give a rest to some pressing out-door work, fearing that we should be too late in the orchard house, as the buds of Peaches, &c., when they become too forward are apt to be rubbed off in pruning and tying, and yet it is as well to have the buds swelled a little before pruning, so that the wood buds may be cleanly seen. All that were likely to be in danger have been thoroughly done, and only the washing of late trees and the cleaning of the ground in one house still remain to be done, and both may be completed in a day when it would be too wet to be out of doors. The trees against the walls have all been attended to after trees and walls alike had been thoroughly washed and cleaned, both being well syringed with warm soft-soap water, the walls washed down with a hard brush, and then painted with fresh limewash. We generally tone down the limewash with a little blue-black, but as the wall was getting a little dark in colour, we used a thin limewash just as it was, knowing that the dark colour would just tell a little on the white of the lime so as to prevent its being too white. If the wall were not nearly covered with trees the reflection of heat from a white surface would make the branches and buds near it rather hot. We run over the twigs with a thin mixture of water, clay, soft soap, and sulphur; we like Gishurst used thin, but the one is almost as good as the other. If taken in time, just before the buds swell much, there is nothing more effectual for destroying insects and their myriads of eggs than syringing several times with soap water at about 180°.

Our difficulty in getting this done except by pieces at a time—say the wall and the trees on it at one time and the trees planted-out and in pots in front of a lean-to house at another—arises from the fact that in general these orchard houses are crammed with plants and vegetables in winter, that would not stand the hot water. Even in cleaning now, we could only do part of a house at a time, not knowing what the winter might be. Besides Lettuces in the latest houses there were lots of Salvias, Roses, Deutzias, and the Chrysanthemums in pots after blooming. We took out all the latter, and plunged them out of doors, with a few laurel branches to protect them if the weather become severe. Some of these we shall grow on, others divide, and of others make cuttings. We have so much more faith in prevention than cure that, besides looking to the trees, we make it a point to remove a portion, fully 1 inch, of the surface soil in the pots from the floor, slightly fork-up, say half an inch deep, see where a little water is wanted, top-dress again, first with rotten dung mixed with lime to destroy all worms, and then surface neatly over with fine fresh soil. All such matters require labour and time, but in general it will be saved in the little trouble given by insects, &c., afterwards.

After such cleaning and fresh-surfacing, whatever plants may be introduced will not cause the houses to look shabby. We shall have lots of flowering plants ere long, and Strawberry plants along the fronts, as they will come on gradually so as to be taken to other places under glass, and would advance all the sooner if we kept the orchard houses a little closer.

Success in all unheated orchard houses greatly depends on not pushing the trees forward, but, on the contrary, retarding them as much as possible in spring. The later that Peach blossoms open, the later that Vines break, the less likely will they be to suffer checks from cold, &c., afterwards. If we had a few days of very sunny weather before the bloom opened, we would not only give all the air possible, but most likely would dull the glass a little, so that there should be no extra stimulus to the buds, until there were a corresponding action at the roots. A week's difference in the opening of the blossoms often

makes the difference between failure and success, though a Peach tree in full bloom in a cold dry house with the air still, will stand a good deal of frost uninjured. Still, early blooming is not desirable in such cold unheated houses. A keen amateur has informed us that his Peach trees were in bloom in his unheated orchard house on the 20th of February. We had rather the same thing had taken place fully a month later. As the season has been, we do not think his trees will suffer, but we have had seasons in which such trees could scarcely have been kept secure without the help of an iron stove or two in the coldest nights. Of course, when heat can be given the time of blooming is a matter of little consequence. Where no heat of any kind is intended, the retarding by abundance of air, even a little frost, will be safer than encouraging them to grow. When once the fruit is set, such retarding can soon be made up by taking advantage of the sun in securing a greater but safe amount of heat.

ORNAMENTAL DEPARTMENT.

For all out-door work—looking after florists' flowers in the open air or protected, as Auriculas, with glass—refer to previous numbers, and be all the more particular if we should have sharp frosts after so much wet. In *planting* what we intended to be specimens of *Pinuses* (of course we prefer even for them autumn planting, but owing to the season and other matters, many nice little plants will be turned-out between this and April), there is this advantage in spring planting, that as the buds swell the roots are enticed into action. The great advantage of autumn planting is that the warmth in the soil entices the roots to form fibres, and these then are ready to meet the demands of the swelling and expanding buds. With the exception of the few species that delight in marshy ground, the great bulk will thrive all the better, and look all the better if, instead of being planted on the level or in a hollow, they are planted on a mound. Thus, for Araucarias, Deodars, Picea Pinsapo, Wellingtonias, Pinus excelsa, &c., a load or two extra of good loam would be a great help, so that the tree may stand on a flatish rounded knoll. The roots will soon go under the surface, but the collar of the plant will never be troubled with stagnant moisture. Plenty of moisture can be obtained even there by mulching, and as the trees become somewhat venerable in years the mound, worn down by that time, will still show somewhat of a pedestal for the fine base of the stem. How different even to the eye does a fine old tree appear when its stem seems to creep, as it were, through the level ground, from one scarcely more handsome standing on a knoll with its huge roots close to the surface near the bole! The tree should thrive better, because the bulk of the roots will be in the richest surface soil. The distance that roots will travel is astonishing when thus encouraged; and the length of the roots, like so much strong cordage, is the greatest preservative from tempests. The finest Araucaria in the grounds at Woburn stands over a deep drain, giving it all the advantages of a mound. We should like to see now the Araucarias planted at Woodstock, Ireland, by Mr. McDonald, now of Phoenix Park. They were on raised mounds with a substratum of open stonework. We have long thought that the giving way in many places of Araucarias was owing to their being planted on the level. All the best we have seen were secured from anything like stagnant moisture.

Half-hardy Annuals.—It is well to defer sowing for a few weeks unless there is plenty of glass room to permit of their being pricked out and having their growth encouraged. Without that advantage very early sowing is a mistake, as if kept in the hotbed the plants become drawn-up and weak, and if merely sheltered out of doors they are apt to get chilled and stunted, which they would not be if they had been three weeks or a month later, for then in the case of Asters, Stocks, &c., the pricking-out might be dispensed with, though it is always an advantage when the room can be given.

Azalæas.—We gave those in full bloom plenty of water, and rang the sides of large pots near the base in order to be sure by the dull rather than the sharp sound emitted, that the soil was moist to the bottom of the pot. In the case of such hair-rooted plants, two or three waterings may be required at times to effect that object, and if the part of the firm ball is dry the flowers will not open kindly nor the young wood push freely. In extreme cases where the water stood on the surface a long time showing where the drainage was right, and that the lower part of the ball was dry, we have placed the pot in a tub of water until no air-bubbles appeared, and the ball was thoroughly wetted. A ring of the pots frequently will prevent the necessity of such a summary operation; but even by that means many a fine plant has been saved that otherwise would have been injured by insufficient watering. Our plants in bloom have only had common greenhouse treatment, but when wanted early, soon after blooming and being cleaned, they should be taken to a forcing house to make wood and set buds, and then hardened-off in a cool atmosphere until it is desirable to start them.

Rhododendrons in bloom and swelling their bloom buds, especially if under-potted, require abundance of water. Some of the old tree kinds are very beautiful.

Camellias swelling buds and blooming require free watering. Those which have finished blooming require but little water until the young shoots are coming away. If after this the plants can have a little shade and a temperature of from 60° to 65° until the wood is made and the buds set, the blooming will come early the following season, for this early period is that in which *Camellias* stand forcing, and not when we wish the buds to expand. Plants in fair-sized pots will stand several years without repotting if there be once or twice a year a rich surfacing; but when potting is deemed necessary, perhaps the best time is just when the fresh growth is taking place, provided extra heat and shade can be afforded them, otherwise we should prefer potting after the growth is made and the buds set. We have often tried both plans, but preferred the first when we could give the desired conditions.

Fuchsias.—Repotted some in smaller pots, and generally after removing most of the old soil. Of plants that were just breaking, and with soil and roots rather dry, we dipped the roots for a few minutes in a tub of water at about 65°. The swelling the roots with moisture in such cases is better than much watering before there is free growth. Cuttings put in now in a hotbed strike quickly.

Cinerarias require plenty of water, and the cooler the base can be kept the more free will they be from insects. The same may be said of *Calceolarias*. The large-flowering kinds should now be put in their blooming pots. Primulas should be also well watered, keeping the water from the collar of the plant. We repotted the most forward *Pelargoniums*, and tried to give them more room. Scarlets, single and double, placed in rather large pots and rich compost, will make striking objects in summer. Potted *Gloxinias*, and looked over *Caladiums* preparatory to placing them in fresh soil. They do not keep well, even if dryish, in a temperature under from 55° to 60°.—R. F.

TRADE CATALOGUES RECEIVED.

J. Backhouse & Son, York.—*Catalogue of Alpine Plants and Hardy Perennials*.

J. Carter, Dunnett, & Beale, 237 and 238, High Holborn, London, W.C.—*Carter's Farmers' Calendar*.

S. Shepperson, Prospect House, Belper.—*Descriptive List of Florists' Flowers, Greenhouse Plants, Bedding Plants, &c.*

Drummond Brothers, 52, George Street, Edinburgh.—*List of Agricultural Seeds*.

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

BOOKS (*A Subscriber*).—A manual on greenhouse plants is preparing and will suit you.

BOILER FOR WEED-KILLING.—*A Subscriber* wishes to be informed where he can procure a machine for destroying weeds on walks like that used at Trentham, which distributes boiling brine over them.

PLANTING POTATOES (*An Amateur*).—There is no "vital objection" to growing Potatoes on the same plot two years successively. On a fertile light soil we have grown them for eight or ten following years. Such a case is exceptional, and it is usually better to let the Potato follow some other crop. Bono dust may very advantageously be dug into the soil at planting time.

CULVERKEYS (*F. R. S.*).—We have searched, vainly searched, to identify the plant known in the seventeenth century by the name of "Culverkeys." Walton in his "Angler" mentions it, but it is in a quotation from a contemporary poet. Although in one edition Walton calls that poet "Davy's," yet it is certain this is a mistake; the author was "John Denny, Esq.," and the book is entered in his name in the books of the Stationers' Company under the date "1612, 23rd Marti." The lines are as follows, *literatim*:—

"Let them that list these pastimes then pursue,
And on their pleasing fancies feed their fill;
So I the fields and meadows green may view,
And by the rivers fresh may walk at will
Among the Dazies and the Violets blew;
Red Hyacinth, and yellow Daffodil,
Purple Narcissus, like the morning rays,
Pale Gandergras, and azor Culverkeys."

Does anyone of our readers know a county where a plant is known as "Culverkeys?"

SMALL CABBAGE (*R. S. S.*).—All the Cabbages grown for the usual supply of the London markets are of the common Battersea variety. Their size depends on the time of the seed being sown, and of the Cabbages being cut. For autumn and early winter use the seed is sown in the spring of the same year. If you wish for an especially sweet and small Cabbage cultivate either the Nonpareil or the Little Pixie.

WOODEN & IRON-FRAMED HOUSES (*A Subscriber*).—The only advantage of iron-framed houses over wooden-framed is that they are neater in appearance. Wooden-framed houses are less easily cooled, and are less liable to cause glass fractures by sudden expansions and contractions of the frames.

INSECTS IN CUCUMBER HOUSE (*J. H. S.*).—They are mites (*Acari*) feeding on the decayed vegetable matter in the soil. They do not injure the roots of

the Cucumbers; if the roots are diseased we should attribute the injury to the excessive richness of the soil.

LOBELIA SPECIOSA CULTURE (*E. G. G.*).—Good plants for planting out at the end of May can be produced from seed sown on a hotbed in February. When the seedlings can be handled, prick them off an inch apart in pans of rich light soil, shade until established, and harden off in a cold frame in May. They will afford a fine display from June until cut off by frost.

PEWITS IN A GARDEN (*C. A. J.*).—If you have a large garden, sufficient food will be found by the Pewits or Plovers to sustain them in good health, as they feed exclusively on insects, worms, and grubs; but until they get quite used to your garden we should feed them upon scraped raw beef, and hard-boiled eggs chopped small, as a substitute for their natural food. They are fond of damp localities, and often bathe, and they will find sheltered places for themselves at night, so do not require further protection to prevent them from flying away. One of two plans must be adopted—viz., the flight feathers of one wing only must be cut off, or the wing must be pinioned, but the latter is rather a difficult operation, and must be performed by someone who thoroughly understands it. All birds can be more or less tamed by kind treatment and perseverance; but Pewits most certainly are not cat-proof, and are just as liable to be killed by cats as sparrows, &c., and, of course, if deprived of the power of flight have less chance of escape.

SMALL BIRDS DESTROYING BIRDS (*E.*).—As the birds have commenced the destruction of the buds the only remedy will be to cover the bushes with nets, so that the birds cannot get at them, but we find strung black cotton from branch to branch so as to form meshes about 2 inches wide frightens them quite as much as anything. We do not know of any thing smeared over the buds that will keep them off. If the birds are the bullfinch, shoot them.

DRESSING FRUIT-BORDERS (*Idem*).—We should not advise disturbing the borders as the roots are so near the surface, but we would use in place of the proposed tan a dressing an inch thick of very rich compost or short manure. Though the new tan may not do any good, it may possibly when decaying encourage funguses.

POTATOES WINTERED IN THE GROUND (*Idem*).—Unquestionably if the soil is of a friable nature, and they are so deep or protected as to be safe from frost. Your having them in the ground all winter and now taking them up sound and of good quality, is evidence of this. Planting 10 inches deep is more than is safe in all but light well-drained soils, and on all but very favourable soils, and with protection from frost, it would not be advisable to allow them to remain in the ground. Victoria is a very good Potato.

CLIMBERS FOR GREENHOUSE (*W. R.*).—For the girders we should advise *Kennedia bimaculata variegata*, *Hæbrotamnus fasciculatus*, *Mandevilla suaveolens*, and *Sollya heterophylla*. They may be grown in pots placed on the stage. If you wish to plant outside we should have Tea-scented Roses as *Maréchal Niel*, *Safrano*, *Climbing Devonians*, and *Catherine Mermet*. They would succeed well in a good outside border if introduced through the wall of the house.

VARNISHING WOOD PALINGS (*A Constant Reader*).—Instead of gas tar we should have the palings coated well with black varnish, which is used largely by us for iron fencing, wood railings, and various kinds of rough out-door woodwork. It dries quickly, and when exposed to the sun does not give off any fumes injurious to vegetation. If the woodwork be dressed or planed we should have it painted oak colour; the anti-corrosion paint is good. The black varnish can be obtained through most oilmen.

HOLLY LEAVES VARIEGATED (*C. T. H.*).—The leaves you sent are only what we have on several of the gold-leaved Hollies. It is a sport common to the kind in one or other of its stages of growth. It is *Ilex Aquifolium ferax aureum*. The parts exhibiting the leaves all yellow are mostly weak, and on being put on a stock would revert to the original character of the variety; in fact, they will return to it on the tree, or, if much shaded, will die off.

CENTAUREA RAUCOSA FROM SEED (*Idem*).—It comes true from seed, which if sown now will make good plants by the end of May, provided they be forwarded in a gentle hotbed up to the middle of that month, and then hardened off. The seedling plants are not so good in colour the first season as those from cuttings, as they have not the silvery whiteness of older plants, and are more free in growth.

SEPTEMBER-FLOWERING GENETILLIS TULIPIFERA, DRACOPHYLLUM GRACILE, and CROWEA SALIGNA (*J. C.*).—The *Genetillis* you may probably succeed with, also the *Dracophyllum*, by now cutting away or shortening all the flowering shoots, and at once placing the plants in a temperature of 50° at night. Increase the heat 5° in a fortnight, and in this temperature continue the plants for two months, allowing a rise of 5° by day from fire heat, and 10° to 15° or more with sun and abundance of air. After this place the plants in the greenhouse in a light airy position, and keep them rather dry. They may, probably, go to flower if placed in a rather moist and close atmosphere at the middle of July, but you will need to give them the temperature of a stove to flower them. Plants to flower at such an unnatural season should be specially prepared, and with hardwood plants it is best done by retarding rather than forcing. Were you to retard the plants for two years, so as to make them bloom later every year, you would, probably, be able to flower them more satisfactorily at the time you wish; but we do not perceive the propriety of flowering these plants at such an unnatural season. *CroWEA saligna* will flower at the time you wish under ordinary treatment, retarding it in a pit if likely to be too forward, otherwise grow it in a greenhouse.

POTTING BREDDING PLANTS (*E. J.*).—The mode of potting you adopt is good, especially the use of moss in place of crocks for drainage. If your soil is just moist your potting is not too tight, but if it is in a moist state we should pot less firmly. The soil for this class of plants ought to be rather firm and close, but not hard. Go on as you have been doing.

SHALLOTS DECAYING (*N. S. S.*).—These should have been planted in February, or as soon afterwards as the weather permitted. The ground should be well manured in autumn, thrown up roughly for the winter, levelled down in dry frosty weather in February, and after a few days dressed with woodashes or powdered charcoal, spread over the surface to the depth of about half an inch, and then forked in. Form the ground into beds 4 feet wide, with 1 foot alleys between, and divide it into rows 9 inches apart, with the side rows 6 inches from the alleys. Draw drills an inch deep, and plant in them the bulbs or offsets singly 6 inches apart, just pressing each bulb firmly, and fill the drills to the general surface level with fine soil. Occasionally stir the soil between the rows, beyond which no other care is required. The bulbs should be taken up when full grown—as soon as the leaves begin to turn yellow—and should be laid for a few days on a hard floor or boards in an airy place, and when dry, after trimming off the rougher parts, store away thinly in a cool airy place. We think you grow the common kind that has long

slender leaves and small bulbs. The larger kind is better, being larger in bulb, with shorter stouter leaves, and a very much better keeper. It is known as "Long-keeping."

HEATING BY HOT WATER (Ludlow).—There is no doubt that your boiler will do a great deal more than you require of it. A boiler the same width and depth, and about half the length, would do all you require. In such a case you must moderate your fire, confining it chiefly to the lower part next the bars, and using the damper. When once the water is heated a small fire will keep it so if asphit and furnace doors are shut. You say the boiler is an open one, and that you mean to take the flow pipe 3 inches from the top, and the return pipe close to the bottom. If the boiler is open, like a wash-house boiler, we would not raise the flow pipe 3 inches to the extreme end, with an air pipe there, as that would be as high as the top of the boiler, and it would be apt to run over as the water expanded by heat. Better lay your flow pipe level, or not more than a rise of an inch in the 60 feet, with a small air pipe all the same. Under such circumstances the water will circulate very well on the level with the air pipe, and you will have 3 inches in the boiler above the pipe to allow for expansion. With an open boiler the circulation, though perfect, is more languid generally than in a close one. In your case we would cover the top of the boiler with a wooden lid, as that will keep the heat in and help the circulation. Some of the first boilers we worked were something like wash-house boilers, and they worked very well; but, of course, it was impossible to heat houses from them where the pipes were on different levels.

PACKING HOT-WATER PIPES (J. Bourne).—For hot-water pipes we prefer the sockets being done with red lead and plenty of the usual hemp or jute packing. Where there is great pressure we prefer the joints near the boiler being put in with iron cement, but guarding against an excess of sal-ammoniac with the iron filings. There is a danger of the joints cracking when too much ammonia is used and the joints are made too full, but there is no risk of cracking when the work is well done. We once had a small house heated; the joints were firmly made, and the cement was brought outside and smoothed round like so much putty, but there was hardly a joint that did not crack in a twelvemonth. Other houses were done in the same way, the jute packing driven well home, and then more mixed with the iron cement, but from a quarter to half an inch of the socket was left unfilled all round. In such pipes for the best part of thirty years there has never been a leakage nor a cracked joint.

DEFECTIVE HEATING BY HOT WATER (H. T.).—There are two things that rather bewilder us. First, if the house can easily be kept to 60 after ten o'clock at night, and yet stand to 33° or 34° in the morning, there must be a fault in banking up the fires the last thing, so as to keep up a slow but heating combustion. The question is, Is the house easily raised to that temperature in a coldish night? Because there is such a thing as heating with difficulty, and then if there is anything wrong with the pipes when the extra stimulus is withdrawn, there will be a want of circulation. Then, again, though you show us the position of the boiler, we are left in ignorance as to which is the flow and which the return pipe, and in either case the mode of placing the pipes seems somewhat complicated. Of course, the flow pipe must proceed from the top, and the return go as close to the bottom of the boiler as is convenient. Once more; in this span-roofed house, 30 feet by 16, and 11 feet to the apex of the roof, there are no pipes at the south-west end; there are two pipes along the south-east side and end, and three pipes along the opposite north side—quite sufficient to keep out frost and maintain a temperature of from 40° to 45° in cold weather; but to keep up a temperature of from 50° to 60° in cold weather three pipes would be required all round as far as the doorway. Even with the position of the boiler in the corner where it is, and with the pipes as they are, it would have been better to have had a T flow and T return, and then the flow and the return each way would have been separate, and there could be no flow in the circulation if air pipes were placed at the highest point at each end. Even with the present arrangement air pipes should be placed at the two ends, and that might neutralise the going round and joining one pipe to three, &c. Now to the direct questions. 1. There is no disadvantage, quite the reverse, in having the pipes on the same plane instead of one above the other, only one pipe must be made the return, and go at once by a rapid or more regular descent to the bottom of the boiler. In a house with a small boiler in a corner like yours, we had one flow pipe, and joined it to three; the three went round under a stage, parallelogram shape, rising a few inches to the farther point. An air pipe was placed there. The three pipes were exactly on a level. From that highest point a pipe descended and went to the bottom of the boiler, and no plan could answer better, as it would be difficult to say which of the three pipes was hottest. Owing to the doorway you could not go round, and therefore must have a separate return pipe, but until it nears the boiler it may be on the same level as the flow. 2. It matters nothing where the supply tank is, provided the water is not frozen. 3. No reason of the temperature falling, excepting what is suggested above—a little watching and regulating of the fire. We are sorry we do not know the Eouvardia referred to.

ASPARAGUS PLANTING (Aurora).—Of the kinds you name we should prefer Conover's Colossal, and not have more than one-year-old plants. Of the other kinds we should prefer Grayson's Giant, and of this plant two years are preferable to those three years old. They grow more freely, attain a cutting size as soon as older plants, and altogether make better beds.

DAISIES ON LAWN (Idem).—We do not know of anything better than a knife—a slow tedious method, but certain.

BICOLOR AND TRICOLOR PELARGONIUMS FOR BEDDING (An Amateur).—Antagonist, Edith Pearson, Edward Milner, Louisa Smith, Sophia Dumaresque, and Mrs. Headley—those for bedding. For pots and probably bedding, Macheth, Mr. Rutter, Prince of Wales, Peter Grieve, Sir Robert Napier, and William Sandy. Those are Golden Tricolors. Silver Tricolors are Charming Bride, Lass O'Gowie, Miss Burdett Coutts, Mrs. Colonel Wilkinson, Excellent, and Mrs. John Clutton; the last, Prince Silverwing and Mabel Morris are best for bedding. Bicolor or Variegated and Bronze: Black Knight, *Carris Fowler, *Her Majesty, *Countess of Kellie, Arthur H. Wills, *Mrs. Lewis Lloyd, *Meridian Sun, *Princess of Wales, *The Moor, Prince of Wales (Downie & Co.), *Mrs. George Gordon, W. R. Morris, Imperatrice Eugénie, and Harrison Weir, with *Crimson Banner. Those distinguished with an asterisk are best for bedding. You will find all good varieties, the zones well defined.

HARDY ANNUALS FOR ROSE CIRCLES (Idem).—They will need to be of small growth, and should be sown where they are to remain early in April. *Alyssum maritimum*, *Calliopis marmorata* nana, *Campanula Lorei*, *Candytuft*, *Centranthus macrospilus*, *Collinsia hartwegii*, *Eschscholtzia crocea*, *Godetia tenella*, *Leptostaphylon densiflorus* and var. *abusus*, *Limnanthes Douglasii*, *Linum grandiflorum coccineum*, *Lupinus nanus*, *Mignonette*, *Nasturtium Tom Thumb*, *Nolana atriplicifolia*, *Oenothera bistorta Veitchii*, *Santivitalia procum-*

bens flore-pleno, *Silene ruberrima*, *Sapenaria calabrica*, and its white variety, *Venus's Looking Glass* blue and white.

PROTECTING FRUIT TREE BUDS FROM BIRDS (Arthur).—We think you are in error as to the chaffinches taking the buds of your fruit trees. Are they not bullfinches? The green linnets, sparrows, and bullfinches are the only birds we know that take off the buds of fruit trees. Chaffinches with us are very numerous, but they only take insects and small seeds. The only thing we have found of any use against birds taking buds is to string worsted from branch to branch of the trees, forming a kind of net-like meshes. It frightened the birds. We should be obliged by information on this subject. Lime dusted over the trees answers for a time, but the first rains remove it, and so of other dressings we have applied. Reluctantly we have been obliged to resort to the gun.

PLANTS FOR GREENHOUSE (P. S.).—Half a dozen *Annuals* are *Amaranthus salicifolius*, *Browallia grandiflora*, *Celosia Huttonii*, *Globe Amaranthus*, *Balsam*, *Rhodanthe maculata*. They should be sown in a hotbed, and grown on in heat, removing them to a greenhouse after they are shifted into their blooming pots. *Biennials*: *Herbaceous Calceolaria*, *Cineraria*, *Chinese Primrose*, *Claudius Dampieri*, *Ipomopsis elegans*, and *Arctotis grandiflora*. *Perennials*: *Cyclamen persicum*, *Acacia coccinea*, *Cypripedium racemosum*, *Chorozoma cordatum*, *Daubentonia coccinea*, and *Salvia splendens compacta*. *Climbers*: *Bignonia Tweediana*, *Kennedy Marryatiae*, *K. himaculata*, *Lapageria rosea*, *Mandevilla suaveolens*, and *Tacoma* *Vau-Volxemi*.

SEEDLING PRIMULA (E. Hillier).—The flower is very double and large, but not superior to others exhibited this year before the Royal Horticultural Society's Floral Committee.

OUTGOING TENANT'S IMPROVEMENTS (C. T.).—You cannot recover from the landlord anything for what you have expended on or done to improve the land. Even if you had taken the ground for more than a year, it would not have placed you in a better position. It would not be equitable to make the landlord pay for improvements which were done without his consent. You made them to suit your own purposes.

PROTECTING FOREST TREES FROM HORSES (Forest).—We do not know of anything applied to the stems that will keep horses from gnawing them. Gas tar is of no use; they strip off the bark of trees with it on. We should have some strips of inch boards fixed round the stems as high as the horses can reach. The boards may be about 3 inches broad and secured with iron hoops, a space of about 2 inches square being left between the boards, which should be secured by screws at the top, centre, and bottom. Wrap the bottom of the stem with a hayband, also the top, so as to keep the boards from injuring the bark of the trees when worked by the wind. They will last a number of years, do not require nearly so much room as guards fixed at some distance from the trees, and are quite as effective.

STOCK AND ASTER CULTURE (A. S.).—We have found that the best method is to sow the seed early in April on a slight hotbed; in fact we make up a hotbed about 2 feet high of sweetened dung, and put on a frame. We put in about 8 inches of light loam with a third of leaf soil and some sharp sand, and allow the heat to warm the soil through; then we make the surface very fine by raking, and form drills with the finger about a quarter of an inch deep for the Stocks and half an inch deep for the Asters, and the same for Phlox Drummondii. If the soil is moist we cover lightly with the hand, using the soil employed for the bed and drawn from the drills; but if the soil is dry we give a gentle watering and do not cover up for 24 hours. The drills are about 1½ inch apart, and the seeds scattered about a quarter to half an inch apart. Keep close and shaded until the plants are showing through the soil, then admit air freely, and withdraw the shading. Water only when the soil becomes dry and in the morning, continuing to admit air in mild weather, and protecting only from frost. Use mats in addition to the lights on frosty nights. When the plants can be handled have in readiness another hotbed, if the frame they were sown in be not large enough to hold them, pricked out in rows 2 inches apart for the Stocks and 3 inches for the Asters, the plants 1 inch apart in the rows, and put them in up to the seed leaves, but no deeper. Water gently, and keep rather close and shaded from bright sun until they are established, after which you can hardly admit too much air. They will be fine plants by the middle of May, and after having been well hardened off they should be planted out at the end of the month. The hardy annuals sow the second week in April where they are to flower, and the Tropaeolums at the end of April. The Stocks have gone off from being sown too thickly and owing to want of air.

AIR-ROOTS ON VINES (T. I. H.).—Air-roots on Vines are caused by the close moist atmosphere of the house. You may either cut them off or let them remain; they do no harm to the Vines, and are produced under the best management. We would not care to have the drainage from the dwelling house running into the rain-water tank in the vineery, but would prefer to have a separate tank outside the house for the drainage; it could then be mixed with water and applied to the Vine roots with advantage.

PRUNING FRUIT TREES IN POTS (M.).—You will find treble buds only on the strong young wood of your Peach trees; you may cut them back to a treble bud. The weaker shoots have mostly single buds; these should not be cut back as a rule. The trees can be kept of a bushy habit by summer-pinch-ing. The Peach tree that has lost its blossoms without the fruit setting may be cut back closer than the others if it requires it; in other respects it will require the same treatment. We cannot say why the buds dropped prematurely; it might have been overdryness at the roots. Some sorts do not set their fruit freely when cultivated in pots.

PRUNING VINES (Idem).—If 6 and 9 feet respectively is the length the Vine rods have grown on Vines planted last July, then they are very weak and should be cut back to within a foot of the ground; or, as it is now late to cut the Vines, rub all the eyes off except two or three at the base, which ought to be trained up the rafters, and would make strong canes during the ensuing summer. If, on the other hand, the canes were strong and well ripened, 6 and 9 feet would be good lengths to cut them back to.

AUTUMN RASPBERRIES NOT FRUITING (Centurion).—You have not planted the autumn-bearing sorts; if you do so they will certainly bear in autumn. The best we have seen are *Merveille des Quatre Saisons* or *October Red*. There is also a yellow variety of the same name. With us the *Red Antwerp* bears well in autumn. There is also *Rivers's Autumn Black*, which we have not seen.

HEATING A SMALL CONSERVATORY (Jinks).—In such a case as yours we think the best plan would be to have an iron stove, with a flat head to receive a plate-iron pan filled with water. The stove must be large enough to have a fireplace inside lined with firebrick, if the fireplace should only be 6 or 8 inches square. Such a stove without piping would average about 70s. A small pipe from 3 to 4 inches in diameter could go through the most convenient part of

the roof, a square of glass being replaced by a square of zinc with a hole in it. Burn coke or clean cinders, and damp the ashes when cleaning out. Remove the stove from April to November.

ORCHARD-HOUSE MANAGEMENT (A. T.).—You will find an article in No. 516 of our new series which will give you the information you require. As the trees will soon be in flower, keep the atmosphere of the house dry at that time. Pears under glass do not set so freely as Peaches. If the weather is dull and cold artificial heat should be applied, with air in the daytime. Water freely at the roots after the fruit is set.

REPOTTING HOYA CARNOSA (Idem).—Pot the plant at once if it requires it; doing so will not stop its flowering. If this Hoya grows freely in a stove temperature, and the shoots are trained near the glass, it will be certain to flower. Florists' varieties we cannot name. The greenhouse plant is *Polygala oppositifolia*.

FLOWERS FOR TABLE GLASSES (Petite).—We do not know of any seeds you could sow in such shallow narrow glasses to do any good. We can only advise you to fill them with sand saturated with water, and use any cut flowers that may be in season in your garden to fill them when required. No doubt such bulbs as Crocuses would do pretty well, as the flowers are formed in the bulb or corm the previous season.

INSECT EGGS (L. J. K.).—The cocoon covered with eggs is that of the female Vapourer moth (*Orgyia antiqua*). It is a very common insect, and being (in the female state) destitute of wings, it scarcely moves from its cocoon, in which it generally deposits its eggs after pairing with the winged male.—I. O. W.

NAMES OF FRUITS (H. F.).—A is Lamb Abbey Pearmain; B is Aromatic Russet. (Rev. C. B.).—The Pear, Bourré de Rance; the Apple, we think, is Cox's Orange Pippin.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY SHOW JUDGES AND REPORTS.

VERY much has been said lately as to alleged inconsistencies in awards at poultry shows, in some cases no doubt correctly; but in some other cases the fault-finders do not seem to be even aware of all the circumstances which must be taken into consideration by any really good judge. Ignorance in most cases begets prejudice, and so it is in this case. As types of comments which seem to me just and unjust, I may take the remarks of "OBSERVER," which were calm and judicious, and of "JUSTITIA," which (I have already assumed through want of knowledge, and not through ill-will) certainly are not worthy the signature appended to them.

With regard to "OBSERVER'S" remarks, there certainly is a crying need for more of really able and conscientious judges. Even when in good health, Messrs. Hewitt and Teebay cannot be at every show; and I have again and again remarked there is hardly an important show yet which has a really sufficient staff. Whoever may be the judge of certain classes, if he has to keep on his legs from morning to nearly six o'clock, with only a hastily-discussed sandwich between, can his later awards be equal to those made when mind and body were both in full vigour? The work often given to poultry judges is really cruel, and I often wonder they do not follow the prevalent example, and "strike for shorter hours." I wish they would; it would be an unmixt benefit did every judge of repute make it known that he declined to arbitrate over more than a certain number of pens at any show, and insisted upon an hour for dinner in the middle of it!

But I confess when we come to consider where the new judges so desired by "OBSERVER" are to be found, the answer is not so easy. It seems nice to speak of "electing" them, but where are the people to be elected? That's the rub. And I venture to repeat a suggestion I have made elsewhere, that it is worth considering whether able service in this department, as in others, is not worth proper remuneration; and that were this understood, it might, perhaps, induce several perfectly competent men to devote themselves to it almost as a kind of profession. I scarcely see otherwise how we are ever to get judges who are "neither breeders nor exhibitors," desirable as such judges are. Mr. Hewitt stands alone; and while it is, of course, possible some one else may appear who shall combine the happy qualifications of enthusiasm, experience, independent circumstances, and the will, as well as the power, to devote the whole of his time without fee or reward to other's service, I confess it appears to me unreasonable even to hope for it.

Let me suggest again, that if we expect any judge to start up who shall rival Mr. Hewitt all at once, we shall never see such expectations realised. If he will pardon me for my way of putting it, even he did not become what he is all at once—he "grewed." The most intimate knowledge of any variety will not necessarily make a good judge of it; for this, certain peculiarities of mind and eye, as well as experience in actual judging, are requisite. Does anyone doubt this? Let him try a very simple experiment. Let him go to Birmingham on the judging-day, without a catalogue, and note down as best he may what pens he thinks should be distinguished in his own pet classes. Let him resolutely deny himself the temptation to see whose they are, but judge them honestly in ignorance of this, as the judges have to do; and then on the Monday let him compare his own mental awards with the catalogue of names. He will reverse many of his own decisions until he has had some ex-

perience of this sort of thing, and he will find out by degrees that it is much easier to criticise awards with catalogue in hand, than to go through a bewildering class of, perhaps, nearer a hundred entries than fifty, and make even a tolerable approximation to correct judging. Names are a wonderful help. Perhaps if the judges had them too their awards would be more "consistent." Let anyone do as I suggest, and he will speak more gently than some of our correspondents have been doing.

I have seen numerous errors in judging—undeniable errors; and I may add that I never met a good judge yet who for a moment denied he had often made such, or who was at all backward in acknowledging them individually at any show if courteously pointed out; but no man can be expected to do so in reply to the disgraceful language I have sometimes (though very deaf myself), felt truly ashamed to hear addressed to gentlemen who had done their best through a hard day's work without the smallest reward of any kind. While admitting this, however, I may add to it, that having had occasion for purposes of my own, known to many readers, to attempt something like an analysis or average of the judging at our best shows for several years past, I have been myself astonished at the surprising amount of consistency and agreement, and the very small proportion of marked exceptions which appear when thus tested for purposes in which personal interests have no sway. That there is any real difficulty in ascertaining what, in general, the judges look for in various fowls, I cannot admit, nor can it be substantiated by any impartial observer. An exhibitor who is wondering why his birds do not win may not find the task so easy.

I cannot, therefore, by any means agree with "JUSTITIA'S" remark, that without a "code of rules" there "appears to be no hope of satisfactory judging," and when we go from this general statement to the specific ones this correspondent makes to substantiate both it and his complaints of the reports too, these do not appear any better founded. Thus, he states that birds (Dark Brahmas), "that would have been branded as culture-hocked last year, are now considered comparatively clean-legged." I think I have studied Dark Brahmas as carefully as most men, and I affirm without hesitation, that so far as any difference at all can be observed, the exact contrary is the case; several perceptibly hocked cockerels having been awarded prizes in 1871-2, whilst there is no instance at any of the main shows (London, Birmingham, Manchester, and Bristol), of such birds winning in 1872-3. Minor shows are less reliable. I speak of those as having most authority.

His question as to how you can "reconcile" your "report" of the Devizes class of Dark Brahmas, and complaint of the "want of impartial criticism," are not better founded. I would rather not have referred to his argument on this point, as it refers to a bird of my own breeding; but as it is his only one, and explains, moreover, a very large class of misconceptions on points of judging, I can hardly avoid doing so. He says, "It so happens that the cup and second-prize pens exhibited at Southampton" were at Devizes, and "as they gained a victory over the Crystal Palace and Birmingham cup-bird, it follows [here is the fallacy—a type of many], that the cup-pen at Devizes must have been a very superior pen of birds." Now, without dwelling on the fact that the report of Devizes did not depreciate the cup-pen at all, but only the class generally, a reference to the report of Southampton will be rewarded by finding the remark that "Pen 75, unnoticed, belonging to Messrs. Newnham & Manby, contained by far the best cockerel [the cup bird at Birmingham], and would certainly have been entitled to the highest honours had he been shown in good company." I do not know who wrote either report, and am not going to deny that either or both may possibly have been mistaken. I only wish to point out that both may be "impartial," and the Devizes one can easily be "reconciled," since it thus appears the cup-bird through which the line of comparison is drawn, as "public form" is calculated with racehorses, was not, so far as reports go, "vanquished" at Southampton at all.

It was worth while to mention this, as the remark in the report of Southampton shows in this case so clearly the origin of the misconception, which is, as I remarked, but a fair type of a large class. But even "JUSTITIA'S" general complaint, that birds which have won at one show have been unnoticed at another, does not of necessity prove any fault of the judges. The difference in the competition may have been very great, and I once had myself to give first prize to a pen which in a good class would not have deserved more than a commendation. But still more frequently it happens that birds are shown so often, they go "all to pieces." The mischief is often almost imperceptible, except to a very practised eye, till it is far gone; and even such a judge as Mr. Hewitt, though he sees and knows that the birds are nearly worn-out, and will soon knock-up, may be able to see no valid excuse in their appearance (which is all he may go by) for withholding the highest honours; when one more show does the business and finishes them, for the time at least. The process has not really been sudden, but it appears so, and the birds are all at once passed over. Other matters

which may change rank occur at once to the mind, such as birds being at times shown singly, at others with mates (*vide* Southampton already quoted), sometimes in company with their own ages, at others all ages together. But I have said enough to show that many apparent inconsistencies would disappear upon patient analysis and reflection.

Many errors remain; all I can say as to these is what I have said so often already. It is no use railing at gentlemen who do their best to serve us. The one tangible remedy is to provide more judges, and to give them time for their work. The proportion of fair and good awards under the present scandalous overwork they have is to me really extraordinary, and I can only believe that with a little more consideration shown to them, the real causes of complaint would be few indeed.—L. WRIGHT.

THE FORTHCOMING POULTRY SHOW OF THE HANTS AND BERKS AGRICULTURAL SOCIETY.

I HAVE before me the schedule of the above Show, to be held this year at Southampton, and although it may in many ways be called liberal, I am fain to confess that the reason by which the prizes are apportioned is to me a mystery. To Polands, which at the Society's Show last year could only muster four pens, we now have allotted three classes, and £6 10s. in prize money. To Hamburgs, which put in but a miserable appearance last year, four classes, and £6 in prize money. While to Dorkings and Cochins, the principal features of last year's Show, are given but one class each, and £3 in prize money. The framers of the schedule may say, "We wish to encourage these neglected breeds;" if so, why do they not give a class to Malays, which last year mustered four pens, though they had to compete in the Variety class; or to Leghorns or Silkies, which mustered as strongly as Silver-pencilled Hamburgs?—C. B. T.

HANLEY POULTRY SHOW.

I HAVE before me the Judge's book and the catalogue. In the Judge's book, Class 30, Ducks, any variety, first is pen 351; second, pen 350; third, pen 354; highly commended 353. No. 354 is Mr. J. Walker's, 353 is Mr. Watts's; and whatever was the intention of the Judge, the above is correct. Such being the case, how could the Committee act different? But on Mr. Martin (the Judge) giving his impression that it was different we forwarded another third prize to Mr. Watts, although we had received a most unjustifiable letter from him, which merited a solicitor's reply. With us our desire was to do right, and for the paltry sum of 5s. it is wrong to accuse any body of men of premeditated dishonesty. In Mr. Fletcher's case it was our mistake, and I am sure he will be sorry when he sees your remarks; and on receiving his courteous letter expressing his disappointment I at once referred to the kind of prize, and by the same post wrote and ordered the manufacturer to forward a most handsome tea service, and also wrote to Mr. Fletcher; and was much pleased at receiving a kind acknowledgment, and a guinea as his subscription to the Show. As to the management of the Show, the only unkind remark that we have received is through your Journal, and why it should be so I am at a loss to understand, as no trouble or expense was spared to make it a success, which for your information it was; and the only complaints that came to our notice were Messrs. Watts's and Fletcher's. I would observe that every bird and dog were in the hands of the Railway Company by twelve o'clock the day after the Show. Not so bad for a "badly-conducted Show."—GEO. BRADFORD, *Chairman of the Hanley Show*.

[We readily insert the foregoing. The "unkind remarks" were from those who considered themselves wronged, and from one of the Judges. We made no comment, although we should have been justified in commenting, since even the Secretary wrote that there seemed to be "something we (the Committee) cannot get to the bottom of."—EDS.]

THE EPWORTH AND WHARFEDALE (OTLEY) SHOWS. — These Shows are arranged respectively for the 9th and the 10th of May. In the first instance the Show of the latter Society was arranged for the 9th; but on the case being represented to the Council, these gentlemen with great courtesy decided to hold it on the following day; and the Committee of the Epworth Society followed suit by arranging for the conveyance of specimens from their Show to that of the following day, the only condition being that the labels of birds intended for exhibition at Otley must be forwarded to the Secretary of the Epworth Society. The schedule of the Epworth Society is much the same as that of last year. For poultry there are twenty-two classes, mostly two prizes in each class; for Pigeons twelve classes, with three prizes in each; for Cage Birds seven, and for Rabbits four; in addition there are five silver cups in the various sections. The prizes offered by the Wharfedale Society are a great improvement upon those of previous years, the classes being much more

numerous in all sections; and in each class there are three prizes. Rabbits are for the first time introduced into the schedule. Five silver cups are offered for competition.—E. HUTTON.

SEATON-BURN POULTRY SHOW.

The second annual poultry Show was held on the 15th inst. at this, one of the Northumberland mining villages. Considering that the Society is in its infancy, the gathering was very creditable, and the management unusually good. Unfortunately, there is not a room sufficiently large to accommodate so many pens as were shown and the visitors, and recourse was had to a marquee in an open field, which, notwithstanding the coldness of the weather, answered the purpose admirably, and the abundance of straw which was strewn upon the ground prevented the dampness of the turf being felt.

The *Dorkings*, *Brahmas*, and *Spanish* were really good, but the *Cochins* poor. *Game* were a great feature of the Show, and there were some good specimens shown, though many were exceedingly coarse and rough in appearance; in fact, it seems to be a great difficulty to convince many in Northumberland that an exhibition *Game* fowl should be, some adhering to the old short-legged heavy-feathered style of bird. There were some good *Hamburgs* in most of the classes; indeed the winners throughout were good specimens. The Silver-spangled and Golden-pencilled were remarkably good, and a handsome pen of Black carried off the first prize in the Variety class, good *Crève-Cœurs* being second. In single cocks the first was a good *Brahma*, and the second *Brown Red Game*. Perhaps one of the best birds in the Show was the first-prize hen, *Brown Red Game*, which left no point to be desired. Black and *Brown Red Game Bantams* were a large class, but there were many worthless specimens. Black Reds were first, and *Brown Reds* second, both pens being very good. In the class for Any other variety of *Game Bantams* a neat pen of *Piles* were first and *Duckwings* second, the latter being closely pressed by another pair of the same variety. In *Bantams*, any other variety, the birds were poor, with the exception of the winners, which were Blacks. Single Bantam cocks were all *Game*, and some of the birds very good and showy, and we noticed one pure white, which, but for the shortness of head and beak, would most decidedly have attained the first position as *Game*. There were but six pens of *Ducks*, but these were extremely good, the first-prize (*Rouen*) finding a ready purchaser on the opening of the Show, the second being also *Rouen*, and the third *Aylesbury*.

DORKINGS.—1 and c, W. Swann, Bedlington. 2, W. J. Thompson, Morpeth. COCHINS.—1, A. Stephenson, Dudley Colliery. 2, W. Swann, Bedlington. c, W. J. Thompson.

BRAMA POOTRA.—1, W. Swann. 2, R. Shield, Swallow. c, W. Sanderson, Seghill Colliery.

SPANISH.—Black.—1 and 2, Sanderson & Oliver, Whalton. *hc*, R. Shield, Swallow. *W. J. Thompson*, c, W. J. Robson, Newcastle. *W. Swann*.

GAME.—*Black-breasted and other Reds*.—1, T. Young, Beside Colliery. 2, T. and J. Robson, Bishop Auckland. *hc*, J. Nelson, Cockshaw, Hexham; 2, Middlemoss, Seaton Delaval; T. Watson; W. Stewart, Dudley; Sharp and Merryweather, Dudley Colliery. c, W. Lindsey, Morpeth. *Duckwings and other Greys*.—1, T. and J. Robson. 2, J. Nelson. *hc*, Taylor & Hetherington, Bedlington Colliery. c, W. J. Thompson. *Any other variety*.—1, G. Perey, West Crumlington. 2, W. Wilkin, Dudley. *hc*, W. Drysdale, Longhirst Colliery. 3, G. Colley, Seaton Delaval; J. Richardson, Seaton Burn.

HAMBURGERS.—Silver-spangled.—1, R. Moore, East Rainton. 2, G. Turnbull, Ashington Colliery. *hc*, G. Stalker, West Sleekburn. G. Turnbull. c, G. Johnson, Choppington Colliery. Golden-spangled.—1, G. Stalker. 2, G. Johnson. c, G. Johnson; G. Stalker. E. Bell, Brenkley.

HAMBURGERS.—Silver-pencilled.—1, R. Moore, East Rainton. 2 and c, J. Wilson, Shank House Colliery. Golden-pencilled.—1, D. Cheyne. 2, R. Moore. *hc*, R. Shield, Swallow; J. W. Schofield, Morpeth. c, W. Johnson, Cowpen Colliery.

ANY OTHER VARIETY.—1, W. J. Thompson. 2, T. and J. Robson. *hc*, R. Parsons. *Cock*.—1, J. Neasham, West Sleekburn. 2, J. Nelson. *vhc*, T. and J. Robson. *hc*, T. Young; Taylor & Hetherington; T. Dodd, Seaton Burn; W. Lindsay, Morpeth; Sharp & Merryweather, Dudley; W. Swann. c, W. J. Thompson. *Hen*.—1, T. and J. Robson. 2, J. Parkinson, New Delaval. *hc*, R. Shield, Swallow; W. Swann. *hc*, W. J. Thompson; W. Johnson, Burradon Colliery. c, R. White, Cockshaw, Hexham; J. Pattison, Beside Colliery; Davison & Mitchison, Nether-ton.

GAME BANTAMS.—*Black-breasted and other Reds*.—1, J. Short, Bedlington. 2, W. Davison. *hc*, C. Cruddis, Seaton Delaval; J. Nelson; G. Wight, Dinnington Colliery; Fairless & Robson, Wideopen; W. C. Moody. c, J. Young. *Any other variety*.—1, J. Douglass, North Seaton. 2, R. White. *vhc*, T. Reavely. *hc*, R. J. Hartley, Altrincham. c, T. Gallon, Wideopen; J. Ross, Beside Colliery.

BANTAMS.—*Any other variety*.—1, Taylor & Hetherington. 2, J. Neasham, West Sleekburn. *hc*, W. Sanderson, Seghill; J. Neasham. c, W. J. Thompson. *Cock*.—1, J. Short. 2, Miss M. Parsons. *vhc*, R. White. *hc*, Fairless & Robson. c, C. Cruddis, Seaton Delaval; J. Dickinson, Stakeford; R. Gustard, Seaton Burn; W. C. Moody, Newcastle.

DUCKS.—1, J. Nelson. 2 and 3, Miss Wilson, Morpeth. *hc*, R. White; J. W. Schofield, Morpeth.

The Judge was Mr. E. Hutton, Pudsey, Leeds.

EXEMPLARY PUNISHMENT.—At the Southwark Police Court on the 17th inst., Elizabeth Coffey, a middle-aged woman, was charged before Mr. Partridge with cruelly torturing a hen, the property of Elizabeth Seager, by cutting off its comb. The complainant said she lived three doors from the defendant, who was always quarrelling with the neighbours and annoying the children. Witness and her husband kept a few fowls in a shed in the yard, and on Tuesday morning one of the hens got out, and the defendant's door being open, it rushed into her front

room. Witness sent one of her children after it, when the defendant seized hold of the hen. The child called out, "Mother, Mrs. Coffey is cutting off the chicken's head." Witness rushed to the door, when the defendant threw the hen out of the house, and said, "I'll serve you the same." Witness then picked up the chicken, and found that the comb had been entirely cut off, and the poor thing was almost blinded in blood. (Witness here produced the hen for his Worship's inspection, and it was in a frightful state.) Elizabeth Jane Seager, 10 years of age, daughter of the last witness, said she saw the hen fly into the defendant's house. She ran after it, when Mrs. Coffey snatched up the chicken, and taking a knife off the table commenced cutting its head. In answer to the charge the defendant said the fowls caused a great nuisance by always rushing into her house. Mr. Partridge told her he had no doubt she had committed this wicked and deliberate act of brutality. He sentenced her to two months' hard labour at Wandsworth House of Correction, without the option of paying a fine.

THE JUDGING OF POUTERS AT BRADFORD AND NORTHAMPTON SHOWS.

I AM quite at a loss to understand the difference in the Judges' opinions of the Pouter hens at the above Shows. I showed a Red Pouter hen at Bradford, where she was very highly commended; Mrs. Ladd showed two White hens, but they were not mentioned. I sent the Red hen the next week to Northampton, where she was not even commended, whilst Mrs. Ladd was first and second with the same two hens that were not mentioned at Bradford. Can anyone inform me if there are any standard points by which to judge Pouters, or is it a mere matter of fancy? The hen I showed took the first prize and cup at Glasgow this year for Pouter hens any age, in the Black, Blue, and Red or Yellow classes, and (as she is much fresher than she was then) I cannot understand how it was that she did not get even a commendation at Northampton, as the Pouters shown at Glasgow were considered to be the best lot ever brought together in Scotland.

I should feel much obliged if some of the Judges would kindly let me know the points by which to judge Pouters, so that in future I may know whether I am buying a good bird or not.—
WILLIAM RIDLEY, *Hexham*.

MOTTLED TUMBLERS.

MR. FORD, than whom no fancier is better able to speak on the subject, has called in question the answer given in the Journal for March 6th on the colour of Mottled Tumblers. The gentleman who put the question also sends another line on the subject. I will frankly own that in writing the reply to Mr. T. Moore I had not, being absent from home, Eaton's work to refer to. I there find that the model bird has a mottled back. But that it is an open question, or, at least, one on which some fanciers hold one view and some another. I must refer to the large work entitled "Pigeons," published by Messrs. Routledge in 1868, just ten years after Eaton's, and in it the Black Mottles, particularly the upper one of the two, in the picture have no white at all on the back; and in the body of the work, page 112, it is written, "Mottles have a dark ground, black, red, or yellow, and occasionally dun, slightly mottled with white on the wings, and sometimes also on the back." I own I prefer them without the white feathers on the back, but it is all, of course, fancy, and fancy is changeable; but I think the birds look neater without the handkerchief back.—THE ONE WHO WROTE THE ANSWER.

THE RABBITS AT NORTHAMPTON.

THE fact that 162 pens of probably the finest specimens in the country were collected together was a sight for the admirer of the Rabbit varieties. At Northampton the entries for Rabbits were more numerous than at any other show. More Rabbits have been collected probably, but in pairs, and in reference to these in question as a whole they were a decidedly good and valuable collection. To particularise would be a pleasurable duty if our space would admit.

The Lops, Self-coloured (nine entries), were clear and almost faultless in their respective markings, and the Sooty Fawn buck may be considered an almost perfect specimen, and for such attributes the cup was his reward. He is not perhaps the largest of those seen at times, yet his qualities render him valuable. The second in position a Blue buck, and third a Black buck of almost perfect jet-like shade, were equal to their positions, and the others claiming honourable mention were of considerable merit, and probably at no other time are the Self-colours to be found in greater numbers in the rabbitry than at the present throughout the country. The variety Coloured Lops (eleven entries) were excellent; the Tortoiseshell doe as the cupwinner is a large and well-marked animal, the second in distinction of same marking is a valuable Rabbit, and fitting companion to

her more distinguished neighbour. The Grey and White Buck as third in position gives promise of being a fine animal, as he is only eleven months old. The other pens were too important to escape favourable mention. The Angoras (eighteen entries) were with few exceptions fine specimens, not probably so large as we have seen, yet in fineness of wool, &c., decidedly good; and had their owners made more free use of the comb before their appearance in public, the animals would have looked all the better, for probably no variety depends more upon this attention for its general showy appearance. The first-prize and cup specimen young doe was of great value; a few months will find her still more attractive. A doe as second, a young buck as third, were also worthy of their position. A French Rabbit of large size shown in this class, a Fawn Buck, and a Black were the three exceptions to the prevailing colour White. Some were in a state of moult, consequently appeared to disadvantage, others presented a strong and less silky fineness of wool so desirable. As a rule the Angoras are in greater perfection during the warmer weather, and present a fulness of fleece scarce to be expected in a less genial season.

The Himalayans (twenty-six entries), were a splendid class, some almost perfection, and evidently exhibited at the right time judging from the darkness of points, so all-important. Some few were moulting, hence their chances of success were considerably less. The doe which won the first prize and cup was in excellent condition and moderate size; the second prize also went to a doe, and the third to a buck—these were well-formed animals. The class was probably one of the best ever seen.

The Silver-Greys (twenty-two entries), were presented in a variety of shades and size, so generally observed in this animated variety, and we are glad to observe that that near approach to the Chinchilla, so desirable, is now more frequently observed than in years gone by, and the first and cup pen, a doe, was both large and of true shade; the second, also a doe, if probably not quite so large was of great merit; and the third, a buck, was worthy of his position; the others in favour were valuable specimens of this variety.

The Dutch (eighteen entries), in the diversity of colours were an important class, some pens moulting. The first-prize and cup Rabbit, a Lemon-coloured doe; and the second, a Black doe; also the third in distinction, Yellow doe, were all worthy of their respective positions, and the minor badges of honour were awarded to pens of great merit.

The Auy Variety class (fourteen entries), included a noble-looking specimen of the rare shade (sandy fawn), Patagonian, as first prize, a fine Belgian doe as second, and a buck of the same variety as third. Nine Belgians were exhibited, and we feel assured that if a class for this valuable and now more appreciated variety was given the result would be satisfactory. An Andalusian buck was also exhibited, a Siberian doe, and a specimen of the once-important variety of thirty years ago, designated when first introduced into this country "Silver Sprig." The class was important, more especially as regards the number of valuable Belgian Hares exhibited.

The class for heavy Rabbits included six entries, and the 17-lb. 6-oz. doe as first, the 15-lb. 4-oz. doe as second, and the less weighty one as third, were all of the Lop class, as were the others exhibited.

The Selling Class (twenty-five entries), presented the usual varieties, and two Lops (bucks), as first and second were decidedly good and of the full stipulated price in value. The third, a Silver-Grey buck of great promise (five months), and the others were equal to the position they respectively took.

The Local Class (thirteen entries), was very commendable, and we rather like this feature in a show as an indication of the interest felt. The first-prize winner, a Blue buck (Lop), and second, an Angora doe, third a young Belgian doe, were all decided in their varied points of excellence, and the others exhibited were of good quality.

In conclusion we must offer a complimentary word to the industrious Committee, and not forget their indefatigable and courteous Secretary. May they have every success for the future, in which we think all will concur who saw the complete arrangements made to insure success. The pens were roomy, and supplied by Mr. Turner, of Sheffield; and as to the occupants for the time being, there is little to fear as to their being returned home none the worse for their visit to Northampton. The longest-eared Rabbit was 23½ by 5½ inches, and heaviest 17 lbs. 6 ozs.

GUINEA PIGS.—A writer of distinction, according to the *Scientific American*, says those little, plump, clean animals should be used for food. A mistaken notion is entertained generally that they are a kind of rat, and therefore an unjust prejudice ought to be overcome, since they are excellent eaters. Guinea Pigs are not pigs. They are harmless, timid, vegetable feeders. Their flesh is nutritious and delicate. If once received into our markets, being easily raised, they would soon be prized for their many desirable dietetic properties. Being prolific, too, they

might be raised in vast abundance, their food being an item of no expense, a few cabbage leaves, roots or waste parings being all they would require to grow into proportions to fill vacancies in a gourmand's stomach.

BEE DOMICILES AND BEE SYSTEMS OF MANAGEMENT.

I NOTICE your esteemed correspondent Mr. Lowe, at page 194, expresses regret that the reiteration of his hypothesis has failed to convince me of its soundness. Now I feel sorry he should have given himself this additional trouble, as I was perfectly familiar with the theory, which was simply a reproduction of what he promulgated more than a dozen years ago in the pages of this periodical; consequently it can scarcely be styled as "incidentally expressed."

Let us suppose there are the two hives I drew the comparison between—the straw skep and the Stewarton—side by side. Let us look no deeper than the entrance. Does not the running-in of that sliding door in the Stewarton, which the straw skep lacks, so close as to admit but one or two bees at a time during the prevalence of this bitter March east wind which whistles into both, raise the temperature and stimulate the queen's production? Assume, for the sake of argument, at the moment we looked, both hives were on a perfect equality as to population, bee for bee, is not every additional worker that is called into being three weeks hence, just so much bee-power, if I may use the expression, put upon the field to add to the honey result in the Stewarton over the straw skep? Admit but this thin end of the wedge and the equality theory topples: it is unnecessary to drive it home, the increase being in a progressive ratio. Or does not the exchange of the overloaded combs from this old Stewarton colony with the fully-combed but starving one established last season, without the smallest outlay, save the existence of the one and beneficially affect the other, so as to give the reasonable prospect of a good honey result from both? And pray had the hive *qua* hive here little or no influence on such a result? That starving straw skep has to be fed at present outlay or perish.

Does the spring examination reveal the queenless state of that other Stewarton? The interchange of a frame brood for one of empty comb puts all right. What are the honey results from the queenless straw skep?

Is not an inch or two of more depth, one hive over another, all other things exactly alike, sufficient often to prevent a swarm and complete the super, the former of which in the other case goes off, leaving but empty comb therein, with honey result *nil*? Is the disparity so little between one hive and another when there may be a defect sufficiently wide over the centre to admit the body of the queen to pass through to the supers? and are her peregrinations therein for one morning not sufficient to ruin the honey results of the season?

How many more bees per minute emerge from the Stewarton colony with close on 14 inches of triple doorway room at mid-summer over the two or three of the straw skep, would be a nice calculation, watch in hand, for the theorist; and what a gain in honey result at the season's end, from the greater freedom of egress and ingress alone, besides the bracing stimulating effect of so much fresh air, the practical apiarian knows full well.

Why compel that row of workers to stand busy fanning at the contracted entrance of a straw skep on a sultry summer day? Would it not be a manifest gain to set them free, to the more congenial task of adding to their honied store? Does the manager of the manufactory so waste his labour power? Is he not ever ready to attach a belt to going machinery and economise it? But I forget: a bee hive is not a manufactory—simply a store, says Mr. Lowe. Well, a store be it, then. Are stores too, like bee hives, beyond the pale of improvement? In these days of enormously enhanced manual labour and horseflesh cost, does not the prudent store proprietor dispense as much as possible with both, and adopt the hydraulic or steam hoist, adding materially if not to his honied at least to his monied result at the year's end? And what is to prevent the bee-keeper from adopting the aerial hoist described above?

As to the general question "Which is the best hive?" there is much force in your excellent contributor "B. & W.'s" remarks thereon, at page 109, as to the impracticability of Mr. Pettigrew's competitive scheme.

Mr. Lowe in his fancied contest presupposes his tea-chest the winner from its greater nett weight. Would not Mr. Pettigrew at once enter his protest that nett weight was not honey result? There might be more brood and pollen in the chest; "And pray how are we to ascertain it?" ask the bewildered Judges. "By running it, to be sure," replies Mr. Pettigrew triumphantly; "it is run honey that is most in demand, you know." Liberty is granted. A couple of pairs of chairs are procured from the tent and set back to back, basins and measure from the nearest chinaman's; the bees are got quit of, and each competitor proceeds to break-up his waxen citadel, depositing the combs as

bruised in the suspended cheesecloths. "Look here," says Mr. Lowe, "it's but September. See what a lot of unhatched brood and grubs are here. It is not humane to so destroy them. Where is Mr. Abbot? Possibly he may have a spare frame or two; I could fix in these spare combs nicely and save them." "Wo'n't have it," cries his opponent, "that's modern. Besides, you have told us experiment and chill are synonymous with foul brood. Crush them up, man, they are sappy." "Lend them a little hot water," cries Mr. Synnington from the ropes. Pint after pint is measured and duly recorded in the Judges' note-books. The process is slow, and the crowd of on-lookers impatient. "Can't they wring it out?" cries a voice. This, too, is allowed. Off coats and up shirt-sleeves, and at it they go: straw skep if anything ahead. "One squeeze more," cries Mr. Pettigrew, and the measure overflows. It is declared the winner by a quarter of a pint amid the cheers of the spectators. —A RENFREWSHIRE BEE-KEEPER.

[We have omitted much from the above communication, and must similarly treat all other communications. Our pages are too limited to afford space for merely smart sayings and repartees. We wish every writer would confine his pen to detailing facts and their legitimate deductions. Each is entitled to his opinion, and each is searching for truth.—Eds.]

THE BEST KIND OF HIVES AND THE BRIMSTONE PIT.

BEING an interested observer of this discussion, I have looked into Mr. Pettigrew's book this morning to see what is said about the brimstone pit, and there I find the following instructive paragraph at page 172—"Now let us suppose a bee-keeper has twenty hives at the end of August—ten for stock and ten for honey. Should he apply the brimstone to the ten for honey? No, and again we say no; but drive the bees out of them, and unite them to those selected for keeping. This is a consideration of prime importance, for hives thus plentifully furnished with bees in September are worth much more than those which, being otherwise equal, receive no addition of bees from without. Hives thus strengthened are well able to bear the difficulties of cold winters. They swarm about a month sooner than others in spring; and their first swarms in fine seasons will have their hives filled with combs, and be nearly ready to swarm themselves before hives not so skilfully and liberally dealt with begin to swarm at all. No poor words of ours can describe the value of this hint. Let it go and be circulated widely with that of large hives, and the success of those who carry it into practice will soon stimulate the attention of those who do not. The awful brimstone pit, now used to destroy valuable lives, will soon be considered as something which belonged to the dark ages." And again on page 178 we find—"We are no advocates and patrons of the brimstone pit. We do not use the pit, or ever attempt to put to death whole swarms of bees. We think it bad policy to do so; but we cannot agree with some sentimental folk who hold up the practice as one of inhumanity. It is not more cruel to destroy bees for honey than it is to knock a calf on the head in order to get milk, or to drive the poleaxe into the brains of a bullock with a view to get beef. And what about cutting the throat of a sheep for a bit of mutton? There is nothing in the destruction of the lives of bees more cruel and inhuman than there is in the destruction of the lives of cattle, sheep, and fowls. There has been given to man a power over the inferior creatures, the proper use of which is an advantage and blessing to the human family."

In the interests of fair dealing I send you these extracts, which speak for themselves.—AN OBSERVER.

[How would killing calves, oxen, and sheep for their flesh be justified if it were possible to have their flesh without killing or hurting them? Honey and wax can be obtained without killing or hurting the bees.—Eds.]

NADIRING.

At the request of one of your correspondents who signs himself "A LOOKER-ON," and asks for some information on the advantages or disadvantages of the practice of nadiring hives, I must confess that my own experience of this practice has been very limited, for the simple reason that it has never in any case of trial been found of use except for a particular and limited purpose.

It is an excellent plan to nadir a strong stock in May with a box intended to be used as a super, and to put it over the hive as soon as the bees have begun fairly to work in it. For this purpose my supers are mostly of the same size as the stock-boxes, only considerably shallower. Everyone knows how difficult it sometimes is to induce bees to ascend into supers; but if the plan of previous nadiring be adopted all difficulty ceases, as the bees have already become accustomed to the box and have begun to work in it. With this exception I cannot imagine any advantage in the practice—certainly not if virgin honey be a

desideratum, as the results I have invariably found to be the storing of honey in the old box, which becomes practically a super, and the spoiling of the combs in the nadir, which are apt to be filled with drone comb and to be choked with pollen.—B. & W.

OUR LETTER BOX.

KENT AND SURREY RABBIT SHOW (W. H. W.).—It seems to have been a local show, not being advertised.

POULTRY ACCOUNT (J. H. D.).—You have succeeded exceedingly well, for you have paid for all your stock and their keep the first year, with a small profit over. Go on without change.

GROUND OATS—SLAKING (*Ignoramus*).—Ground oats are not oatmeal, but oats ground and not dressed. Slaking is mixing with hot water.

HEN FOOD.—“A Dozen Hens” wish “Oyster Shell” would reveal the food he employs.

DISTINGUISHING PULLETS FROM HENS (*Breeder of Cochins*).—You proposed a question difficult to answer. It is easy to distinguish between a pullet and a hen, but a fowl twelve months old is not a pullet. She has, if of a sitting breed, laid, sat, and reared her chickens. This much is certain—no pullet has large coarse scales on her legs, unless she is suffering from elephantiasis. We have never had a spurred Cochin hen; the breed is not subject to such an appendage. Dorkings, Game, Houdans all have it at times, even when young, but we have not met with it in Cochins. We should not like to buy such.

DARK AND LIGHT BRAHMAS (*Bristolian*).—There is no difference in the useful properties of the two breeds. It is a mere distinction of colour. We cannot as readily answer your next question. What are the breeds that are best to make the cross-breeds? and what is your object, eggs or fowls? If you want only eggs, put down a Spanish; if fowls, put down a Dorking. In neither case would it be necessary to put an expensive bird. We are enemies to all crosses, and advise you to get some good pure eggs to put under some of our broody hens. Save the produce for your next year's stock, and get rid of your cross-breeds.

RATS IN FOWL-HOUSE (*I. H. E.*).—They are a great plague in a fowl-house. We keep the floor round the wall and foundation of large loose gravel stones; but besides that, there must be continual attention. We also keep a cat in our fowl-house locked in every night. If she does nothing else, she keeps the rats away. We lose no eggs. You must not imagine our immunity arises from the absence of rats. We swam with them, and five hundred were killed from one rick within a quarter of a mile.

ARRANGEMENT OF POULTRY RUN (*Idem*).—Fowls should have a place apart to sit in. We put all ours in close baskets covered at top with wire netting. Thus they are never disturbed. The age at which chickens can be left without their mother depends much on the time of year. Between May and September they will shift for themselves at six or seven weeks, if the rip in which they have roosted with the hen be left for them to use every night, and be left in the same place. During such trying weather from rain, snow, and cutting winds as we have had of late chickens are better under cover, but at the end of this month we shall put all out of doors. The grass is never too damp unless it is slushy, and if it is you should choose another place for the rip. They always do best on grass. The front of the rip should be closed every night for some weeks to come. It must be opened as soon as the sun is up. Till the weather is more favourable put the hens with their ribs at the door of your house, so that the chickens can run out. If they have no grass give some large growing sods. Let them have road grit. Do the same for your hens. If many shell-less eggs are laid, increase the quantity of whole corn for a day or two, and see that the brick rubbish contains plenty of mortar and old ceilings. It is very often only a temporary derangement of the secretions.

FERTILITY OF DUCKS' EGGS (*M. H.*).—The fertility of the eggs will depend on the depth of the tank. The size is immaterial, but it should not be less than 18 inches deep; 2 feet will be better. A bread-pan or a washing-tub sunk to the level of the ground will answer every purpose; but failing the depth we have named, the gardener is right.

BRAHMA HEN TUMOURD (*Inquirer*).—The probability is it is a cheesy tumour, and the longer it remains the harder it will get. It is more than likely it prevents the hen from laying, and that would cause her to walk with tail on the ground. Take a pair of scissors, and cut off the feathers all round; rub the naked spot with oil. Put your thumb and finger at the bottom of the swelling; it will sometimes burst through the skin. If it will not, take a sharp knife and cut it across, squeeze it at the bottom at the same time, and it will come out clean. Wash the wound out with alum and water. Sew up the cut with two distinct stitches or more if necessary, and rub sufficient grease on it to prevent the entrance of air. She will soon get rid of her torments, but it will be an assistance to her if you rub some oil under her wing close to the body, at the back of her head, and along her backbone.

DORKING COCK'S COMB WOUNDED (*J. M.*).—If the comb was an upright one before, was only outwardly damaged, and is properly and thoroughly healed, it is probable it lops for want of condition. If it be flaccid there is no doubt that is the cause. He was probably shut up during treatment, and has lost health. Give him a run to himself, or if that be inconvenient get some cottager who has no fowls of his own, and who has a good run, to walk him. He will doubtless come round.

HAMBURGERS IN LIMITED SPACE (*Hamburgh Breeder*).—You may keep two cocks and eight hens, but you must let them all run together. You must do it, because by your proposed arrangement you will keep on at a sea-saw. Improved on Monday by the 4-foot run, deteriorated on Tuesday by being restricted to 8 feet, you will make no progress. If you find you cannot keep two cocks together, let all the hens run, but the cocks only on alternate days. Close confinement is very trying to Hamburgs.

JACOBIN WITH SWOLLEN BREAST AND VENT (*A Subscriber*).—Most likely it is a gathering, and before you read these lines, matter has formed and the place has been opened by you. Possibly it arose from a bruise in the long journey you mention. If a bad case your bird will die.

REARING PHEASANTS (*J. B.*).—Your letter would be a good advertisement for the firm.

HIVES (*M. J.*).—It is quite impossible for us to undertake the commission. If you showed a drawing of any wooden hive you prefer to a carpenter, he ought to make you one.

LIGURIAN BEES (*N. S. S.*).—Italian and Ligurian bees are the same. All things being equal, we consider Ligurian to be superior to the black bees. It would be of little advantage to you to obtain a stock of them in a common straw hive unless you use loose-frame or bar hives, and could raise queens artificially. For particulars as to price, &c. apply either to Mr. A. Neighbour, 149, Regent Street, London, or to Mr. Pettitt.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		A.M.				IN THE DAY.						Rain.
1873.	March.	Baromet- er at 9 a.m. and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
We. 12		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	0.010	
Th. 13		29.862	88.8	86.3	N.W.	41.2	47.0	33.0	91.2	83.1	—	
Fri. 14		29.503	35.3	34.8	N.	41.1	44.4	32.7	83.1	82.2	—	
Sat. 15		29.798	33.1	31.8	E.	40.5	43.2	24.2	65.2	26.8	—	
Sun 16		29.889	40.4	38.1	N.E.	39.5	43.8	32.5	66.3	29.4	0.032	
Mo. 17		29.816	37.4	36.2	S.E.	39.8	43.0	31.2	48.9	33.4	0.180	
Tu. 18		29.854	38.4	37.0	S.W.	40.4	48.0	36.5	81.1	36.8	—	
		29.920	40.5	40.4	N.E.	41.0	47.2	36.0	61.2	35.0	—	
Means		29.789	87.7	86.4		40.5	45.2	35.4	71.0	32.4	0.262	

REMARKS.

12th.—Some showers, but nearly all the early part of the day fine and bright.
13th.—Snow in the early morning; fine day; rather thick in the evening; sun very bright in the middle of the day.
14th.—White frost in morning; fine, and occasionally very bright till between 2 and 3 p.m., when it clouded over, but no rain.
15th.—Lunar halo at 1.45 a.m., fair but cold, and not quite as bright as on the previous day, though very fine in the early morning.
16th.—Rain in morning; fine in the middle of the day; rain at intervals after 3 p.m.; rather heavy in the evening.
17th.—Fair all day, and occasionally bright, though rather cold; a whistling wind commencing about 9 a.m.
18th.—Rather dull early, and not particularly bright at any time, but taken as a whole a pleasant day.

Temperature nearly 5° colder than last week; the sun occasionally very bright, but not for a sufficient time to warm the air, counteract the cooling influence of the easterly winds, or dissipate the cloud-curtain which has so long rested over these islands.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 19.

IMPORTS AND HOME-GROWN PRODUCE are just about sufficient for present requirements. Good Apples of all sorts are now becoming very scarce, and the American varieties are decaying rapidly. A quantity has lately been offered in very bad condition. Cornish Broccoli is still coming very good; and remain at former prices.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	0	0	Mulberries.....	1	0	0	0
Apricots.....	0	0	0	0	Nectarines.....	0	0	0	0
Cherries.....	0	0	0	0	Oranges.....	1	0	0	0
Chestnuts.....	12	0	20	0	Peaches.....	0	0	0	0
Currants.....	1	0	0	0	Pears, kitchen.....	0	0	0	0
Black.....	0	0	0	0	dessert.....	0	0	0	0
Figs.....	0	0	0	0	Pine Apples.....	1	0	0	0
Filberts.....	1	0	0	0	Plums.....	1	0	0	0
Gobs.....	2	0	6	0	Quinces.....	0	0	0	0
Gooseberries.....	0	0	0	0	Raspberries.....	1	0	0	0
Grapes, hot-house.....	1	0	14	0	Strawberries.....	1	0	0	0
Lemons.....	1	0	6	0	Walnuts.....	1	0	0	0
Melons.....	0	0	0	0	ditto.....	1	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	0	0	0	0	Mushrooms.....	0	0	0	0
Asparagus.....	1	0	0	0	Mustard & Cress, punnet	0	0	0	0
French.....	15	0	0	0	Onions.....	1	0	0	0
Beans, kidney.....	1	0	0	0	Pickling.....	0	0	0	0
Beet, Red.....	1	0	0	0	Parsley per doz. bunches	0	0	0	0
Broccoli.....	0	0	1	6	Parsnips.....	0	0	0	0
Cabbage.....	1	0	1	6	Peas.....	4	0	0	0
Capicums.....	1	0	0	0	Potatoes.....	1	0	0	0
Carrots.....	0	0	0	0	Kidney.....	0	0	0	0
Cauliflower.....	2	0	4	0	Round.....	0	0	0	0
Celery.....	1	0	6	0	Radishes.....	1	0	0	0
Coleworts.....	2	0	4	0	Rhubarb.....	0	0	0	0
Cucumbers.....	1	0	0	0	Salsify.....	1	0	0	0
pickling.....	0	0	0	0	Savoy.....	0	0	0	0
Endive.....	2	0	0	0	Scorzoneria.....	1	0	0	0
Fennel.....	0	0	0	0	Sea-kale.....	1	0	0	0
Garlic.....	1	0	0	0	Shallots.....	1	0	0	0
Herbs.....	0	0	0	0	Spinach.....	1	0	0	0
Horseradish.....	1	0	0	0	Tomatoes.....	0	0	0	0
Leeks.....	0	0	0	0	Turnips.....	0	0	0	0
Lettuce.....	1	0	0	0	Vegetable Marrows.....	0	0	0	0

POULTRY MARKET.—MARCH 19.

WE have a very short supply, and prices are in consequence above the average. Doubtless from the unfavourable weather good poultry will be scarce for a time.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	5	0	5	6	Pheasants.....	0	0	0	0
Smaller ditto.....	4	6	0	0	Partridges.....	0	0	0	0
Chickens.....	3	6	4	0	larks.....	0	0	0	0
Geese.....	7	0	0	0	Kabbits.....	1	5	1	6
Guinea Fowls.....	8	0	0	0	Wild ditto.....	0	9	0	10
Duckings.....	4	0	4	6	Pigeons.....	0	10	1	0

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 27—APRIL 2, 1873.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.		
27	Th	Meeting of Royal Society, 8.30 P.M.	54.1	34.1	44.1	14	48	af 5	23	af 5	54	af 5	58	4
28	F		53.0	34.0	43.5	17	46	5	24	6	11	6	26	6
29	S		53.7	33.4	43.6	13	44	5	16	6	25	6	52	7
30	SUN	5 SUNDAY IN LENT.	53.7	34.3	44.0	19	41	5	28	6	43	6	17	9
31	M	Meeting of Zoological Society, 8.30 P.M. Royal Horticultural Society, Show, Committee, and General Meetings.	55.3	33.9	44.6	18	39	5	29	6	2	7	41	10
1	Tu		55.0	34.4	44.7	21	37	5	31	6	25	7	morn.	4
2	W		57.8	36.7	46.9	21	34	5	33	6	54	7	1	0

From observations taken near London during forty-three years, the average day temperature of the week is 54.7°; and its night temperature 34.1°. The greatest heat was 75°, on the 27th, 1839; and the lowest cold 16°, on the 1st, 1838. The greatest fall of rain was 1.19 inch.

A SELECTION OF PLANTS FOR THE WALLS AND ROOFS OF GLASS HOUSES.—No. 1.



INQUIRIES are frequently made for plants suitable for the decoration of the walls and roofs of glass houses, the following paper upon the subject may be found useful, especially as it includes a list of plants which from experience can be safely recommended. My list is not put forward as a complete one, for it does not include many choice plants that are at places grown for the purpose, and which require, perhaps, more than ordinary skill in their cultivation; my object is to give a list from which plants may be selected that are individually inexpensive, easy to cultivate, and likely to afford a large supply of cut flowers, as well as to give general satisfaction. I purpose dividing the list into two parts, one for the greenhouse or conservatory, and the other for the stove, and with each plant mentioned I will give a few cultural remarks.

Before I proceed further I ought to observe, that in order to secure perfection of growth and development of abundance of both flowers and healthy foliage, most if not all the plants should be planted out in the borders of the house. I say with the greatest confidence, that unless such a provision be made disappointment will most likely be the result. It is not uncommon to meet with handsome and elaborate greenhouses, conservatories, or stoves where a healthy lot of climbing plants would be the greatest ornament, and yet there is no provision for growing the plants except in large pots or tubs, and this mode is seldom, if ever, satisfactory. In these vessels there is not enough of root room to enable the plants to cover their allotted space, and at the same time present an ornamental appearance; in fact, there is no comparison between the two modes of growing these plants.

None of the plants I mention require any very complicated mixtures of soil, neither is there any occasion for a great depth of it—probably 18 inches or 2 feet will suffice. There must, however, be an abundance of drainage beneath it as a provision against stagnant water about the roots. I have generally found that a top-dressing of soil in the spring is far more serviceable to these plants than a greater depth of soil than mentioned above. A deep soil is pretty sure to become soured and soddened from the repeated applications of water, and will consequently stand at a much lower temperature than a shallow one.

Again, in making the borders for climbing plants it is advised by some practitioners to allot a certain space to the roots of each plant by forming brick partitions. I am not convinced of the necessity of this, because most or all of the plants I shall name will thrive exceedingly well in one uniform mixture of soil throughout the border; but if Orange trees, Camellias, tree Ferns, Palms, or any other choice plants are to be planted in the border, by all means let these have separate compartments; they can then be removed at any time without injury to

their neighbours, and the vigorous roots of the climbers will be confined to the border proper.

Taking the first division of greenhouse and conservatory climbers, a suitable soil for them is one-half turfy or fibry loam, not chopped fine—it should not be a heavy clayey loam—one-fourth of fibrous peat, sandy if possible (this should also be worked-up coarse), and the remainder may be equal parts of well-decayed leaf mould and dried cow manure that has been under cover twelve months. Mix all well together, and as this mixture will probably be in the border a long time without being renewed, a quantity of broken potsherds and charcoal nibs should be mixed with it in order to keep the soil open.

Rhynchospermum jasminoides is one of the best and most popular plants. It is an evergreen climber suitable for either training upon pillars or spreading under the glass roof or rafters, but it is not so much at home on a wall. It is a free-bloomer, and its white flowers are abundant and very fragrant. In an intermediate temperature it flowers from May to July. It should be kept dry at the roots during the winter, and should have an abundance of water when in growth and flower.

Gloire de Dijon and *Maréchal Niel* Roses wherever planted are sure to become favourites. They grow vigorously and flower freely in April and May, at which time they are especially valuable for vases, &c. They will flower more or less throughout the summer, but for spring-flowering the growth should be previously well ripened and pinned back to a reasonable length, and if in a proper state of health, nearly every bud left will produce a flower. Give them rest in winter by withholding water and admitting plenty of air.

Cobæa scandens and *scandens variegata*.—These two plants will cover a very large space; the latter is the better for general purposes. They are particularly suitable for domes of large conservatories, and they are ornamental all through the year. They require frequent shortening and thinning of the shoots, and plenty of water when growing; the flowers are insignificant.

Tacsonia Van-Volxemi.—This has proved to be one of the handsomest climbers ever introduced. It will cover a large space, and is most at home trained under the roof of the house, where its branches and flowers hang suspended. Like the Cobæas, it requires a frequent thinning of shoots, so as to produce young growth from which its flowers spring, and in other respects it should have similar treatment. It will flower for months.

Fuchsias.—Of these, *Venus de Medici* among light varieties, and *Black Prince*, *Souvenir de Chiswick*, and *Carolina* among dark kinds, are, I think, the best for the purpose when trained up the rafters or upon pillars. Started from the bottom with a single stem, and allowed to branch out when necessary, they will flower more or less throughout the summer, and are not surpassed by any other plant that I know. In such a position they become sub-evergreen, but this does not appear to interfere with their flowering, which commences in February. I am not acquainted with any other plants that afford such a quantity of cut blooms. Dry them off, both root and branch,

in autumn, afterwards thin-out and shorten the shoots to promote fresh growth. They are not suitable for walls.

Mandevilla saccata produces in clusters a very sweet-scented, white, bell-shaped flower, and is suitable for a cool greenhouse, being harder than some of the preceding. It will answer for covering pillars, rafters, or for spreading over a portion of the roof; in either of these positions it is, perhaps, more subject to red spider and thrips than any other plant similarly situated. It requires to be frequently fumigated and syringed, and must have plenty of water at the roots; for in its season it is a very fast-growing plant. I am sorry such a desirable plant is not more cultivated. I believe many have discarded the plant because it does not succeed very well in a pot. I have seen it thriving out of doors on a south wall at Battle Abbey in Sussex and other places. In such positions it becomes deciduous, and requires matting-up in winter. Under glass the plant should be kept dryish at the root in autumn and winter, and afterwards be moderately pruned before it commences to grow.—THOMAS RECORD.

ROYAL HORTICULTURAL SOCIETY.

MARCH 26TH.

A SPECIAL General Meeting of this Society was held yesterday (Wednesday), in the Council-room of the Society, South Kensington, for the purpose of confirming certain new bye-laws, which have been approved of by the Council of the Society at a meeting held by them on the 11th inst.; the object of the new bye-laws being to enable all Fellows of the Society to vote by proxy, and to make provision for the resignation of the Council. There was a very numerous attendance of Fellows, including many ladies, and the greatest excitement prevailed throughout the proceedings.

At the request of Mr. W. WILSON SAUNDERS, who said he was suffering from hoarseness, in consequence of having had to attend a public meeting elsewhere in the morning, the chair was occupied by LORD ALFRED CHURCHILL.

Sir C. LINDSAY expressed a wish, before the formal business of the meeting was proceeded with, to ask whether Mr. George F. Wilson intended to use the proxies he had obtained by the following letter, which had been sent to a very large number of ladies [hear, hear.] The letter did not fairly state the whole facts of the case, and for that reason these proxies ought not to be used [loud cries of "Hear, hear," "Question, question."] Now Mr. Wilson was committed to all the acts of the Council [hear, hear], for he only resigned on the 11th February, 1873. The letter, which will be found at page 259, was then read.

The CHAIRMAN (after some interruption) said: I think we had better proceed at once to the question before the meeting. I can assure the meeting that Mr. Wilson has acted entirely upon his own responsibility in this matter. We have had no sort of communication with him whatever on the subject, and I need hardly say that any private member has a right to do what he likes.

A FELLOW.—It appears that the date of Mr. Wilson's letter was anterior to the date of the notice from Her Majesty's Commissioners. The letter from Her Majesty's Commissioners, I find, is dated the 8th February.

Mr. WILSON said, I beg to give a distinct answer to the question which has been put to me—I shall most assuredly use all the numerous proxies that have been entrusted to me by the lady Fellows. I also wish to add that I have a right to complain of a letter of mine which has been published in the *Gardeners' Chronicle*, in which a number of words were inserted which I never used, which were intended to make out that I denied being a member of the Council [hear, hear]. My words were, and I have them here, 'As an old member, though not of the present Council.' I was most careful in my words, and I most distinctly deny ever having asked the lady Fellows to vote, but I said, 'The bye-laws of this Society permit you to vote by proxy.' For the part I have taken I can assure the meeting that I have been thanked by numbers of ladies.

A FELLOW.—A most dishonourable transaction [hear, hear, no, no, and interruption].

Mr. G. E. BLENKINS.—I rise to order. Mr. Lindsay has no right to make such a statement at this stage of the proceedings. It ought to come before the meeting properly [hear].

The ASSISTANT-SECRETARY (Mr. Richards), then read the advertisement from the *Times* of Saturday the 15th of March, containing a copy of the new bye-laws.

The CHAIRMAN then said he found himself in a peculiar, and to him somewhat difficult position, inasmuch as he had not had time to put his thoughts into order, as he should like to have done. He joined the Society at a very recent period, as they all knew, and under peculiar circumstances, and when the meeting took place on the 11th of February he purposely abstained from attending, knowing that his election was to come under consideration. He was aware of the letter from the Commis-

sioners making certain propositions to the Council, and his first impression was that it was their duty to reject them. Since then he had altered his opinion on that point, and why? Because a subsequent letter had been received from the Commissioners, in which they entirely withdrew their original proposals, and made suggestions which formed the basis of the proposed arrangements between them and the Council [hear, hear]. That letter having been withdrawn, there was nothing to prevent him from acting with the meeting on the present occasion. Looking at the difficulties and intricacies of the matter, he had since changed his opinions strongly in favour of the policy proposed to be adopted by the Council [hear, hear]. That policy was one of conciliation with the Commissioners. The Society had found that its financial position was such that it was not capable of making that strong and independent movement on its own behalf which some of its members had advocated. His opinion was that they had better under all circumstances act harmoniously with the Commissioners' proposals [hear, hear, and oh, oh]. They were, according to their original proposition, to receive from the Commissioners £2400 a-year, which would in all probability have been paid back again as rent; £2000 towards the extinction of the debenture debt, and a sum which would amount to £1000 a-year for the sale of season tickets, making a total of £5400, and he took it that would have been a binding agreement for the entire term. By that means they would have found their rent would have been paid, and eventually they would have had £2000 a-year to expend upon the gardens. That would have been the result had they adopted the propositions of the Council. Now it might be thought that, whilst giving up this sum, they had excluded the Exhibition public from their gardens, but he was mistaken if it did not turn out that in this they were counting without their host. These were the financial advantages submitted to them, and which were withdrawn upon the letter of the Commissioners to the Council, which was read at the second meeting on the 18th of February. But the meeting, led by the eloquence of the honourable Baronet, proceeded, when there was no question before them, to propose a vote of censure upon the Council for having submitted these propositions to the members [No, no, no, and hear, hear]. I can understand on no other ground could you have wished to pass that resolution.

Sir A. SLADE.—It was the non-adoption of the Report [hear, hear, and applause].

The CHAIRMAN.—That is tantamount to a vote of censure upon the Council, and the Society loses the whole of the financial benefits which would have accrued to them; and, indeed, it is very doubtful whether you have not excluded the whole of the public [hurrah, and hear, hear]. The Council felt that they were pledged to resignation by Lord Henry Lennox, who filled the chair at the first meeting. They therefore, somewhat hastily, came to the conclusion that it would be prudent for them to resign their seats. They did this without examining fully into the bye-laws of the Society; and the result was, they found that as soon as they had done that, there were legal difficulties in the way which could only be got over by submitting a new series of bye-laws to the Society. By doing this they had done all that lay in their power to give the Fellows the means of legally dismissing them if they determined so to do, and electing others to fill their posts. They had used no sort of means whatever to obtain a single vote, either one way or the other [cries of oh, oh, and hear, hear]. He did not believe that a single member had canvassed for a single vote [renewed cries of oh, oh, and order]. The question before them was the adoption or non-adoption of the resolutions, and it therefore became his duty to put them to the meeting *seriatim*. The first resolution was as follows:—

"1. The existing bye-laws of the Society numbered 63 and 82 are hereby revoked and repealed, and the following bye-laws are substituted in the place of them."

Mr. LINDSAY said that as the Council proposed to take the propositions *seriatim* instead of as a whole, his resolution would be that "63 and" in that resolution be struck out. It would save him a great deal of trouble if he criticised what the Chairman had said, rather than give them the history of these proceedings, which he had intended to do [hear, hear], and he had to thank the noble Chairman for having thus facilitated his work. It appeared that on reflection the Chairman entirely endorsed the policy of the Council, and therefore there was no reason why he should not involve him and the Council in a common condemnation, which it was their desire to do [hear, hear]. It would be within their recollection that the circumstances which had led to these proceedings was that at the last Annual Meeting the vote for the non-adoption of the Report was carried by a majority of eighty-six to fourteen. The Chairman then stated that he did not see how it was possible for the Council to take any other step than that of resigning, in which he entirely concurred. He was sorry to say that it had resulted in the most unfortunate circumstance for the Society, because the Chairman dissolved the meeting instead of adjourning it. As soon as that meeting was over the Council held a meeting,

at which they passed a resolution that they had resigned. In consequence of that resolution Sir Alfred Slade communicated with some other gentlemen with the view of forming another Council, and after certain negotiations the Council asked them to wait upon them, which they did, and the statements then made were of such overwhelming importance, that he could not pass them by without notice [hear, hear]. They began by asking if they could suggest any way by which the Council could escape from their difficulty. A more extraordinary question he had never heard proposed [hear, and confusion]. Now the Council were in this dilemma, that when they dissolved the meeting they either knew that they had the power to adjourn, or they did not, and if they did, their conduct was dishonourable in adjourning and not dissolving the meeting. We suggested to them that they ought to be responsible for their accounts, and they made the extraordinary statement that they were not answerable for the expenditure of the Society's funds [cheers and counter cheers]. Just imagine, they were not responsible for one penny they spent! [great laughter]. Then they arrived at another dilemma—namely, that by a mistake of theirs the sum of £931 had been applied to a wrong purpose. Their contention seemed to be that they were not answerable for their accounts. If that were so, it was, indeed, a difficult thing to have confidence in a body possessing such enormous irresponsible powers [cheers and counter cheers]. The Council had frittered away five weeks of the Society's time in making the most abominable bye-laws that ever were framed [cheers and counter cheers]. He desired to say that they were only there to deal with the Council as a body, and not as single gentlemen. If they had thought it desirable to go out as a body there would have been no noise, and all irritation on the subject would have been spared on both sides, and though Mr. Wilson — [interruption].

The CHAIRMAN.—I must request you not to enter into anything not before the meeting.

Mr. LINDSAY.—If it is necessary to charge any one man with having failed in his duty, it was the Secretary who had promised to resign [hear hear], and he considered the conduct of the Secretary in holding a correspondence between his right and his left hand was an insult to the Society as long as he sat in his chair [applause and uproar]. He had stated to the best of his ability the faults of the Council, and it appeared to him that they only existed as a Council by sufferance, to carry on the existing routine business of the Society, and had no power whatever to legislate on its behalf [applause and counter applause]. His opinion and that of the party with whom he acted was, that the Council were under the sway of persons of gigantic influence as Commissioners [cheers and ironical cheers], and that they were under the impression that the Society was insolvent when it was in a solvent state, and it was their duty to protest most emphatically against any such conclusion. He had heard that the Council had conceded part of the land to Her Majesty's Commissioners, and if so they had acted *ultra vires*, and the transaction must be repudiated, for they had no right to barter away property belonging to the Society without its consent [renewed applause], and any such arrangement must be ratified by a general meeting before it could be carried into effect. If the Council, acting on their own responsibility, could bargain away one part of the Society's property, why not everything? The thing would be absurd [cheers]. There might be perhaps some arrangements between the Council and the Commissioners, but they certainly had not appeared in any paper to which that Society had access [hear], and he could only repeat that if such were the case it was a most unwarrantable proceeding. The way in which they had carried on the affairs had not been satisfactory he believed to a single member, and there was every reason to believe that if their efforts had been properly directed they would have been in a much more satisfactory position [applause]. The Council had proved themselves unable to carry on the affairs of the Society to a prosperous issue, and he wished to impress upon the Fellows present the necessity of their voting against the proposition before the meeting, and passing a final resolution unanimously which would enable the Council to resign.

General SCOTT said he durst say they had all heard of the story of "Cælebs in search of a wife," and how the old man was always talking of his lamentable condition as a miserable sinner [cries of "question" and "silence."]. He claimed to be heard [cries of "Speak to the point."]. He was speaking to the point, but the great difficulty in societies like that was to get the Fellows to understand how matters were really situated. If the meeting would allow him he should continue his story [no, no.] It was very short and very much to the point. They had been told that they were all good men with the exception of himself [a voice, "Individually, not as a body."]. Well, he would give up the story, although it was a good one [laughter]. Some three years ago he foresaw what would happen between the Commissioners and the Society, and he placed his resignation in the hands of Mr. Wilson Saunders, requesting him to have it accepted as soon as he thought that it would not be of benefit to the Society that he (General Scott) should remain

Secretary. On two or three subsequent occasions he renewed his wish to retire, and at that very moment he had sent in his resignation. It was in the hands of the Assistant-Secretary, but still he was not a bit certain that he had any right to resign [oh, oh]. The gentleman who spoke last said the Council should have retired in the ordinary way. Why, what was the ordinary way? They had got the opinion of their solicitors, and it was, that according to the bye-laws, the Council could go; but the Commissioners had got an opposite opinion sent them by the Solicitor-General, and he (General Scott) was not sure that the Solicitor-General was not right. The constitution of the Council was to prevent any section of members coming suddenly forward and creating a revolution [hear, and laughter]. He should not be a bit astonished that, when the present Council's resignations were given in, the Council would find they could do nothing. He thought the mode that had been adopted was a very unfair way of attacking the Council. He was almost persuaded that the gentlemen who attacked them knew his (General Scott's) own personal opinion from the first was that the Council should go out, and others be admitted, one by one.

Mr. LINDSAY.—No.

General SCOTT.—At all events there was a noble lord, an acquaintance of that gentleman, would tell him that was the case. He knew that noble lord would confirm his (General Scott's) statement.

Sir A. SLADE.—He is not here to confirm it.

General SCOTT in continuation, said the last time a gentleman made a most extraordinary attack upon him, because, indeed, he had been superintending soldiera who were whitewashing the ceiling of Albert Hall. He should not have been ashamed of that if he had done so, but he really had nothing to do with the matter.

Mr. LIGGINS.—I will explain. I did not mean —

General SCOTT.—Allow me. In 1868 he found a gentleman who was taking great interest in the formation of the Council, speaking in high terms of the "able management" of Lieut.-Col. Scott. Now, that gentleman at all events must have known he was not such a traitor to the Council as he (General Scott), was represented to be. At another meeting a gentleman wished to know what was paid to Lieut.-Col. Scott, R.E., who had not the courtesy to read the Report, but left it to be done by the Assistant-Secretary. It appeared, therefore, that he was too proud for his work. Did he think the only salary he got was abuse, when he had been accused for keeping silence about his avocation and salary?

Mr. LIGGINS.—I am afraid the words were scarcely what were said.

General SCOTT.—The gentleman knows what is coming. Mr. Liggins then said he had much pleasure in proposing a vote of thanks to Col. Scott, the Secretary, for the benefits derived from his services [laughter]. Well, he thought he should go a little further. In 1864 he was asked whether he would come up —

Sir C. LINDSAY rose to order, as this was foreign to the subject.

General SCOTT.—Everything is foreign to the subject which they do not like.

The CHAIRMAN.—General Scott has been attacked, and he has a right to defend himself.

General SCOTT.—In 1864 I was invited to come up —

Sir CHARLES DAUBENEY.—What is the question before the chair? Surely it is the consideration of the bye-laws.

The CHAIRMAN.—He is replying to a personal attack.

Mr. LINDSAY.—Why go back to 1864?

General SCOTT in continuation said he was going to take them to a question which was very much between the Society and the Commissioners. When he came there his instructions were to do what he could to assist the Society, and in 1868 the general opinion existed that he was assisting the Society [hear, hear]. On the last occasion an accusation was brought against him personally, that he had accused the Fellows of the Society of dishonesty for not paying their rent. He had never said anything approaching it, because he never thought, from the first day, that the Society could pay its rent [cries of "oh!" and laughter]. What he did say was, that if the Commissioners pointed out to the Society the way in which, without injuring horticulture, they could pay their rent, then honesty ought to induce them to adopt these means. Well, another attack had been made upon him with reference to the sum of £1200 [a voice, "£900"], paid to the Commissioners [another voice, "It was £900"]. It was £1200, half the rental of the year, and paid because it was supposed that the exhibition would have enabled the Society to pay the whole of the rental. He denied that the thing was forgotten in any way. The Assistant-Secretary, when the money was paid, pointed out that it would be repaid at the end of the year if it were not made. It was only not repaid on account of the present difficulties, but there was no sort of forgetfulness about the matter at all. All he had to say in conclusion was, that Sydney Smith advised some States of America which repudiated their debts to go about with S. S. on their backs. If the Society did not make an arrangement to

pay their debenture-holders, and without injury to horticulture, the time would come when gentlemen who lived in London would be afraid to go about with a flower in their button-hole [loud cries of "Oh!" and laughter.]

The CHAIRMAN.—The question before the meeting is proposition No. 1.

Mr. S. H. GODSON remarked that in 1864, when General Scott was called upon to assist them, they had £15,869 19s. 4d. to their credit.

General SCOTT.—That is not the case.

Sir A. SLADE seconded the amendment. They had now been an hour discussing other matters, and he would ask the meeting to allow him to point out that it would be better if the Chairman had kept to the business of the day instead of making a speech on what had occurred on the 18th of February. When he (Sir A. Slade) and his friends challenged the Council to reply to their arguments, they (the Council) sat down like dumb mice, but they sent a statement all over England which they could not substantiate. That was a most unfair way of answering a public discussion. As the Chairman alluded to him personally, he might remark that the position of the Society with the Exhibition Commissioners was laid down in printed agreements which anyone could read; and if the Chairman insisted the position was difficult and intricate, it solely arose from these ill-advised arrangements made between the Council and the Commissioners. General Scott had told them they ought to pay their rent; but he (Sir A. Slade), told the meeting that they had paid their full rent to the Commissioners, because if the Council had a million sterling at their bankers', they dare not hand over more than the surplus profits of the gardens. It was a gross mistake to say that the proposals of the Commissioners would enable the Society to pay its rent, because upon the face of the agreement it was only to be for the continuance of the annual exhibitions. How was it, then, that the Council should send throughout the country an *ex parte* statement? General Scott told them he did not know whether he had a right to resign or not, but there was a special clause which enabled him to resign.

General SCOTT asked if that was of any importance when his resignation was in the hands of the Assistant-Secretary.

Sir A. SLADE said he was obliged to go into the matter by reason of General Scott's remarks. The Charter stated that "in case of death or incapacity" [great laughter] the Council might appoint a "discreet person" [laughter] to fill the place of the Treasurer or Secretary. Alluding to the £931 he asked, how could they pay £1200 rent, when their surplus profits were only £237? When he had come to the Council-room on that matter Mr. Wilson Saunders said he was quite right, and the money would be refunded. He would second Mr. Lindsay's amendment, because, if people were allowed to vote by proxy, it would give the Council the power of nominating their own successors [hear, hear, and no].

Mr. WILSON SAUNDERS.—One word. As regards the Council having asked for proxies, I most positively assert not one member around the Council table has ever mooted the thing at the Council.

Sir A. SLADE.—That is not stated. I did not say you had done so—I said you had canvassed for votes.

Mr. SAUNDERS.—Not one.

Sir A. SLADE.—May I read a letter for you in which it is said you did canvass for votes? but perhaps you would rather I should not.

Mr. SAUNDERS.—I want to assure you that we did no more than send round that statement to you as our justification.

The CHAIRMAN said he was informed that the highest legal authority held that the agreement of 1871 still held good—to the effect that the public should be admitted to the gardens, the Commissioners paying one-twelfth of the receipts to the Society.

Mr. D. T. FISH rose to support the proposition with respect to the proxies. He was surprised at much that he had heard that day, and he asked them to remember that they were members of the gentle art of horticulture; but they should also remember that they were gentlemen [laughter and cheers]. He was much surprised at the language used towards some gentlemen, and the way in which matters had been discussed that day. He thanked the Council for proposing this bye-law as to proxies, because proxies were just the thing for a society in which there were so many country gentlemen. He should support the proxy bye-law, and the alteration of bye-law 110, so that the members should be provided with voting papers. Mr. Fish was proceeding to address the meeting in continuation, when his voice was drowned by loud uproar and cries of "chair" and "divide."

Mr. WILLIAM HAUGHTON said he observed that when any speaker said anything that was not agreeable to a certain section of the meeting an attempt was made to drown his voice by clamour. He did not think that was fair. He thought that when the original cause of discord came from the Commissioners, and when the Council thought they might assent to a slight modification of the terms, and lay their propositions before the Fellows, he (Mr. Haughton) thought it was the duty of the latter

to consider calmly and without passion what the Council had considered before. He thought that although they might not approve of any particular proposition, they had no right to say that those who recommended it were committing a breach of trust [hear, hear]. He felt the first two terms of the Commissioners' propositions were such as could not be accepted by the Society. At the proper time he hoped to submit to the Society a slight modification of these terms, which would meet the wishes of the great majority of the Fellows, and be perfectly fair both to the Commissioners and the Society. He was not yet in such a position as to feel himself at liberty to explain them. As to the proxies, it was with deep regret he witnessed the noise and tumult, and the attempts to drown voices by clamour exercised by an organised clique [loud cries of order, no, and uproar]. It was an attempt by a *coup d'état* to seize the guidance of the Society's affairs. He regretted there was no power by which absent gentlemen Fellows could vote by proxy. If that could have been done the result of the vote on the Report would have been different [no, no, and hear]. Before he sat down he wished to express to the Council his deep regret for the way in which they had been treated.

Mr. BLENKINS said it must be self-evident to anyone that there were two parties in the room [loud and continued laughter]. It was pretty clear that one party was unwilling to hear what the other party had got to say. He belonged to neither; he had come up from the country—120 miles—to maintain the present Council, which he believed was composed of honourable men [hear, hear]. His reason for voting for the proposition to establish vote by proxy was that he did not think the maintenance of the gardens should be carried on solely by those living in the neighbourhood [cheers]. It appeared that some parties wanted to make the Horticultural Gardens the same as the London squares—the residences of nursery-maids [cries of "No" and cheers]. In the country they well knew what all this meant. He had a few proxies, not obtained by him through unfair means, but from what he had seen reported in the papers of the meetings of the Society. He did not see why a great national Society like this should be conducted by a clique.

A FELLOW said he had heard a great many reasons why the existing bye-law should not be revoked, but none from the Chairman why it should be revoked.

The CHAIRMAN.—A vote of censure was passed upon the Council at a previous meeting. In consequence of that the Council deemed it expedient to tender their resignations, but certain legal difficulties arose. To meet them a certain bye-law was proposed [cries of proxy, proxy, and interruption]. In order to make this alteration we deemed it expedient for horticultural interests that members in the country should be enabled to vote by proxy. There are 3500 Fellows, of whom, perhaps, three thousand reside in the country [no, no], and we thought it only right that they should have an opportunity of expressing their opinions on the policy of the Council.

A FELLOW, who rose amid loud cries of "divide," said he had come from the country, and remarked he did not see why the control of the Society should be in the hands of a small number of gentlemen near the gardens [cheers and "no"]. Why did they show a want of confidence in vote by proxy? If any gentleman had gone into the country sneaking for votes, other gentlemen [laughter] could do the same.

Mr. LINDSAY said his object was to prevent the ladies' privilege of voting by proxy being extended to men.

The amendment of Mr. Lindsay was then put to the meeting, when there appeared upon a show of hands—

For the amendment	107
Against it	53

Majority	54
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Proxies were then handed in, and upon a scrutiny there appeared—

For the amendment	225
Against it	206

Majority	19
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Total majority for the amendment	73
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The original motion submitted to the Council was therefore lost.

The CHAIRMAN said the next proposition was

"2. Every Fellow of the Society shall be entitled to appoint, by written proxy in the form marked D in the Appendix to the existing bye-laws, any gentleman being a Fellow of the Society, to vote for him or her at all or any General Meetings of the Society."

Sir A. SLADE.—That is rejected already, but you had better take a *pro forma* vote.

This vote was then taken, and the new bye-law No. 2 was negatived.

The CHAIRMAN then put to the meeting new bye-law No. 3, as follows:—

"3. Any Member or Members of the Council may resign his or their seat or seats by sending a written notice to that effect, addressed to the Secretary

of the Society; and every vacancy in the Council by resignation under this bye-law shall be filled up by the other Members of the Council, if less than half of them resign at any time, and by the Fellows of the Society at a General Meeting, if the Members of the Council resigning are half or more than half of the whole body; and if half or more of the Members of the Council resign at any one time, a General Meeting of the Fellows shall be called so soon as conveniently may be after such resignation, in order to supply the places of the resigning Members of the Council; and until such General Meeting shall have been held, the resigning Members shall continue Members of the Council, and shall be capable to act as such."

Mr. HARDCASTLE, M.P., wished to move an addition to this bye-law in the following words:—"Such resignation and such election shall take place in the same manner as required by the 10th clause of the new Charter." The honourable gentleman said it was important they should walk in the way of the Charter, and not commit any irregularity in making a new bye-law. The 10th clause of the Charter provided that the election should take place by ballot.

The amendment having been seconded,

Mr. HAUGHTON said this was a two-edged amendment. Its ostensible object was that the election should work in harmony with the Charter, but in any case it must so work. The real spirit of the amendment, however, was that if any member of the Council resigned, the Fellows must accept the resignation whether they liked it or not.

Mr. HIBBERD asked whether the Council in bringing forward this proposition had had sufficient legal advice.

Sir C. DAUBENY.—You may depend they had.

Sir A. SLADE said if the Chairman thought the additional words were unnecessary, Mr. Hardcastle would withdraw them. The CHAIRMAN did not see the point of them at all.

Mr. HARDCASTLE should like, before he withdrew his amendment, to have some assurance that the Council would follow the way of the Charter, and not adopt any other mode of election.

The CHAIRMAN.—As soon as we leave this room, our resignations being in the hands of the Assistant-Secretary, we cease to be a Council, and only conduct the affairs of the Society until our successors are appointed. It is for you to say what course you will adopt.

Mr. W. MARSHALL (member of Council) said this one point had been overlooked. They stood in the position of tenants to the Commissioners, and the Commissioners were their landlords.

Sir A. SLADE asked, Was it possible they were going into the whole question again?

Mr. MARSHALL said that the Charter said there should for ever be a Council. If the Council resigned in a body there was no Council [cries of no, and question]. Was it or was it not so? [A voice, Certainly not]. All he could say was, that Her Majesty's Commissioners were entitled by the Charter to say if there were no Council, "You have broken your lease, and we are entitled to take possession" [oh, oh].

S. A. SLADE.—That is an entire misconception. If the Chairman thought that the bye-law was in harmony with the Charter, Mr. Hardcastle would withdraw his rider.

The CHAIRMAN.—We are indifferent whether the words are inserted or not.

Sir A. SLADE.—Then you accept them.

The CHAIRMAN.—No; I do not mean to say we accept them.

Here there were loud cries of "Vote, vote," and general uproar, which lasted several minutes. In the midst Mr. Fish rose to speak, and moved from his seat into the centre passage of the room, where he made vigorous efforts to make himself heard, but in vain. When order was partly restored,

The CHAIRMAN said he had just received the following notice—"We the undersigned, being five Fellows of the Royal Horticultural Society, object to the voting for three new bye-laws, because by the 16th law of the Charter the voting should be by ballot." [Loud cries of oh! oh!]

Sir A. SLADE said that as regards the first two bye-laws the application was too late, but it was perfectly in order as regards the third.

The CHAIRMAN said the notice had been signed, G. F. Wilson, G. E. Blenkins, J. R. Furnyough, J. Cox, and E. J. Beale.

Mr. MARSHALL then read the bye-law regulating voting by ballot, by which it appeared that a meeting at which a ballot was demanded should be adjourned for not less than five, and not more than ten days.

Mr. LINDSAY asked why, as the Council were so desirous of resigning, did not Mr. Wilson withdraw his protest? The only effect of it would be to give his (Mr. Lindsay's) friends an enormous majority.

Mr. A. F. GOSDON said he had come up from Dorbyshire last night to attend the meeting, and he hoped he would not be asked to come up again.

A FELLOW said that Mr. Wilson was putting the Council into a very false position, and he thought the Council also were putting themselves into a very false and disagreeable position, and he ventured to ask the noble Chairman to request Mr. Wilson to withdraw his protest, and let them proceed to vote on the motion.

After some conversation and confusion, the CHAIRMAN said he took it that the demand for vote by ballot was withdrawn, as well as Mr. Hardcastle's amendment. He should now put the motion for the adoption of No. 3 bye-law in its present form.

The motion was put, and there appeared for the passing of

The Bye-law (by a show of hands)..... 93

Against (by a show of hands) 23

Proxies 37

— 60 —

Majority for the Bye-law 33

The supporters of the bye-law did not use proxies.

Sir A. SLADE asked the Chairman to explain the mode of procedure by which they proposed to resign, and how they were to elect a new Council.

The CHAIRMAN said the Council were willing to facilitate by every way in their power the election of a new Council, but as to the mode of procedure they left that to the meeting. The Assistant-Secretary was instructed to give his best attention to this important point.

Sir A. SLADE said, that according to that they were no wiser than they were before. What day would the election take place?

The CHAIRMAN said that rested with the meeting. The Fellows must hold a meeting.

After a short discussion it was agreed that a special meeting be called for Friday, the 4th of April, for the election of a Council.

A vote of thanks to the Chairman closed a very stormy and excited meeting, which lasted over two hours and a half.

As the *Gardeners' Chronicle* inserted, on Saturday last, Sir Alfred Slade's incorrect version of my circular to the lady Fellows, and his comments upon it, and as the *JOURNAL* and *Chronicle* are seen by my friends all over the world, would you give space to my reply in your next number?

Sir Alfred Slade accuses me of wishing to conceal the fact that I was a member of the last Council, and misrepresents the words I used to prove the truth of his accusation. It is painful to have to make any defence against such an imputation, but as I was in my letter addressing those interested in the objects of the Society, and I had been Chairman of the Fruit Committee as well as member of the Council for the last seven or eight years, it did not occur to me that any doubt could arise as to my personal identity.—GEORGE F. WILSON, *Heatherbank, Weybridge Heath, 24th March, 1873.*

Subjoined is the circular referred to:—

"Heatherbank, Weybridge Heath,

"14th March, 1873.

"MADAM,—Many members of the Royal Horticultural Society having complained that the printed circulars do not reach them, or at least are not read, as an old member, though not on the present Council, and feeling strongly that, whichever of the suggested lines of policy be adopted, the necessary negotiations with the Commissioners will be conducted more successfully by the existing Council than by any new comers, however able, who would have their experience to learn, I beg to call your attention to the statement of the Council now issued, as well as to the notice of an important meeting of the Fellows to be held on the 26th inst.

"The bye-laws of the Society permit of your voting by proxy. Should you desire to keep-in the Council, would you sign and return the enclosed?

"I have the honour to be, Madam, yours faithfully,

"GEORGE F. WILSON."

ROYAL BOTANIC SOCIETY'S FIRST SPRING SHOW.

This was held yesterday, and afforded a highly satisfactory display for this time of year. Hyacinths and other spring-flowering plants were the principal subjects of exhibition, but there were also mixed collections of stove and greenhouse plants and Azaleas. Of Hyacinths, Messrs. Veitch, of Chelsea, exhibited a splendid group of upwards of 120, besides a magnificent twelve in the nurserymen's class. In this, too, Messrs. Cutbush also staged a very fine group. In the amateurs' class Mr. Douglas, Loxford Hall Gardens, and Mr. Withall, produced admirably grown specimens, and good exhibitions came from several others. Tulips were shown in great perfection by Messrs. Veitch, Cutbush, and Douglas; Cyclamens by Messrs. Little and James, the latter having, besides his group, a fine, broad-petalled, pure white variety called Miss James; and Lily of the Valley by Messrs. Cutbush, Reeves of Acton, James Rowe, and others. Chinese Primulas from Messrs. Little, James, Dobson & Son, were exceedingly good. Dentzias in excellent bloom came from Mr. Reeves and Messrs. Lane; the latter also exhibited a fine collection of Camellias in small pots, likewise Azaleas. Mr. Ward, gardener to F. G. Wilkins, Esq., sent good groups of these and of other stove and greenhouse plants, as did Mr. Williams, of Holloway, and Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park.

From Mr. William Paul, of Waltham Cross, came a fine group of Camellias, which has been noticed in a previous report, and cut blooms of Roses; and from Mr. C. Noble, of Bagshot, a

splendid collection of Clematises. Messrs. Veitch sent a small collection of new plants, including *Dracæna imperialis*, one of the finest of the genus; *Phormium atropurpureum*, a striking dark purple kind; and the beautifully marked *Maranta Makoyana*. Messrs. Rollisson, of Tooting, contributed large bushes of Mignonette, which were examples of successful cultivation; and besides a large collection of plants for spring ornamentation, Mr. Ware, of Tottenham, exhibited a very dark-leaved variety of the Sweet William, which may prove useful for bedding purposes. A new Rose, called *Abbé Bramere*, exhibited by Mr. W. Paul, had extremely rich maroon crimson flowers, and appeared to be a very desirable addition.

VEITCH MEMORIAL PRIZES.

THE trustees of the Veitch Memorial have decided to offer medals accompanied with the following prizes at the Meeting of the Royal Horticultural Society to be held at Bath from the 24th to the 28th of June next.

- | | |
|--|----|
| 1. For the best dish of Black Grapes exhibited in the Show | £5 |
| 2. Ditto of White Grapes in the Show, not Muscat..... | 5 |
| 3. Ditto of White Muscat Grapes in the Show | 5 |
| 4. For the best cultivated Orchid in bloom in the Show .. | 5 |
| 5. Ditto Steve Plant in bloom in the Show | 5 |
| 6. Ditto Greenhouse Plant in bloom in the Show | 5 |

Any dispute that may arise as to the definition of stove or greenhouse plants or to any other matter in reference to these prizes is to be settled by the Judges, whose decision shall be final.

GLADIŌLUS, GLADIŌLUS, OR GLADIŌLUS?

THE pronunciation of *Gladiŏlus* and similar Latin words is not a mere question of analogy, as "P. D." would suggest, but of rules recognised by all classical authors; and by these rules Mr. Dombrain's pronunciation is the only correct one, for the following reasons—"Where two vowels meet, the first is always short," with a few well-known exceptions, but of which *Gladiolus* is not one. This disposes of the letter *i*, which must therefore be shortened. As to the letter *o*, there is also a more positive rule—namely, "The penultimate syllable of diminutives is short;" and *Gladiolus* is a diminutive of *gladius*, a sword, and therefore signifies "a little sword;" and these two rules decide the disputed question in favour of Mr. Dombrain's decision.

Of course "P. D." may not like to depart from established usage, however corrupt it be; but as there are three distinct usages in this case it is desirable to reduce them to uniformity, and in doing so to establish that which is correct; and as the word under consideration is a purely Latin word we should be guided in the decision, not by rules of taste, fancy, or analogy, but by those of the prosody of the language to which it belongs, and by which alone it should be determined.—A. M.

THE analogy by which "P. D." wishes to show from *baliolus*, *filioles*, *unciola*, and *alveolus* that the *i* in *Gladiolus* is long, and that the accent should accordingly fall upon it, tends to the very opposite he wishes to establish; thus *filioles* is a diminutive of *filius*, in which the first *i* is long and the second short. Derivatives as a rule retain the same principal vowel accents as their primaries: hence *filioles*, similarly *unciola* is a diminutive of *uncia*, *alveolus* of *alvūs*, and *Gladiolus* of *gladius*. If the prosody of *baliolus* requires the *i* long in the single instance in which it occurs in *Plautus*, yet eminent scholars have expressed their opinion that the word itself is doubtful. Mr. Dombrain has, therefore, manifestly strong grounds for believing *Gladiŏlus* to be the correct pronunciation, in which I fully concur.—A. H. K.

MESSRS. DOWNIE, LAIRD, & LAING'S SHOW OF SPRING-FLOWERING PLANTS.

At the Crystal Palace on Saturday last Messrs. Downie, Laird, & Laing, of the Stanstead Park Nurseries, Forest Hill, and of Edinburgh, opened an attractive exhibition of spring-flowering plants, which is to close on the 5th of April. It is comprised in a double row of tabling occupying 136 feet run. Palms, *Dracenas*, and other graceful-leaved plants are ranged along the centre between the two rows, backed-up on each side with *Epacris*, *Cytisuses*, *Spiræa japonica*, *Lily of the Valley*, and other plants; then come two rows of *Hyacinths*, and in

front a row of *Tulips*, *Chinese Primroses*, and *Cyclamens*. An effective centre to the whole is formed round a large standard Bay by means of *Camellias*, *Cinerarias*, *Prunus triloba*, and plants of *Chamerops humilis*, surrounded with a ring of *Lily of the Valley*. *Hyacinths* in particular are numerous exhibited, but as we have lately devoted so much space to that deservedly popular flower, we will not enter into details of varieties; suffice it to say that the best kinds are well represented. Year by year they are becoming more popular, year by year the specimens produced improve; and they are, besides, an unselfish flower, for both from necessity in their culture and a not unpardonable pride in the amateur owner, they belong as much to the public by "right of eye" as to him by right of possession. We hope that such exhibitions as that which Messrs. Downie and Co. have opened will become more general, for many an amateur will thus be enabled to select for himself plants which suit his means and tastes.

THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 2.

OWING to the singular transformations which take place in the insect world, we are apt to overlook some of the most beautiful objects (*in futuro*) just because we happen only to see them in some preparatory stage, when they are unattractive or seem even repulsive. Thus in the chrysalis or pupa state it is almost needless to say that in nine cases out of ten neither butterflies nor moths show any elegance of form or richness of colour, and the temporary vesture of the enclosed insect gives no sign of the winged being shortly to emerge. Of course the gardener, pursuing his routine of work in the early months of the year, cannot fail to turn up many pupæ as he digs the ground, some of these receiving fatal injuries from the implement employed. I know it is the practice with some persons to pick-out from the earth thrown up everything that is supposed to be an insect, and destroy it; and I have seen on gravel walks numerous pupæ which had been crushed intentionally, a good part of which were probably quite innocuous to the garden. Amongst the beautiful insects which thus occasionally come to a sudden yet painless end is the Lime

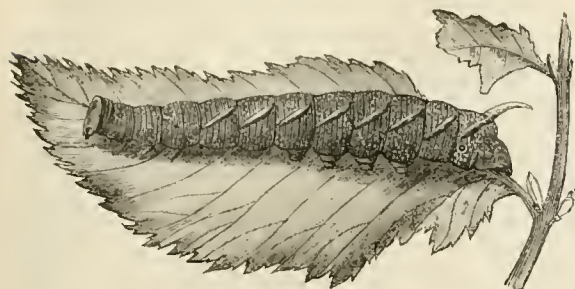


Lime Hawk Moth (*Smeirinthus Tiliae*).

Hawk Moth (*Smeirinthus Tiliae*), the caterpillar feeding not infrequently on that tree growing in gardens, though also occurring upon the Elm. I must acknowledge, however, that the first specimens of this caterpillar I ever saw were procured for me by a worthy old gardener at Norwood, who had watched their growth amongst the leaves of a tree, and obtained them with some trouble by mounting for them. Rarely, if ever, are these caterpillars sufficiently abundant in one spot to do any injury, and therefore we may seriously plead that either in the larval or pupal state the insect should be spared, and suffered to come forth as a handsome and strong-winged moth to career about the garden and roadside in the dusk of evening. As do others of its relatives, it prefers the "gloaming," being popularly classed amongst those called in some country places "Owl Moths." Sometimes these Hawk Moths are mistaken for bats.

During the day this moth, in its position of repose, offers a striking instance of Nature's mimicry. An individual will suspend itself from a twig or branch, with the wings so folded

that the brighter hues are not observed, and, keeping perfectly motionless, it may easily be mistaken for a withered leaf. Some naturalists think that insects when in such positions are actually in a state of sleep, though how far this is correct is questionable. Many moths, if we touch them while they are in their sluggish state, at once fly off, others withdraw their



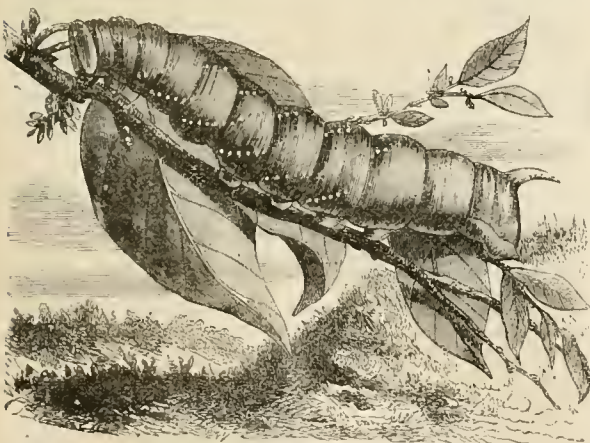
Larva of the Lime Hawk Moth (*Smerinthus Tiliae*).

legs from the object they are resting on, and feign death; the Lime Hawk, however, and its congeners strike out with the front pair of legs, as if annoyed.

Of the three *Smerinthus* known in Britain, *S. Tiliae*, though the least in size, is deemed by certain connoisseurs to be the handsomest, on account of the richness of the colouring, shades of olive brown and green being set off by a few lighter markings. For my own part, however, I must confess to an admiration for the Eyed Hawk, in which both the upper and lower wings please the eye. This species has, it may be remarked, been already named among "predatory insects," being at times found feeding freely on the Apple.

The Lime Hawk has nothing hawk-like in its disposition, being one of the most pacific of insects, only taking excursions in pursuit of honey, which it eagerly imbibes through the proboscis, and this is rather slender and short as compared with that such moths as the Death's Head and the Privet Hawk are furnished with. The name of Hawk is only applicable to these insects as possessing strength of wing and celerity, though I am inclined to think that these moths do not travel long distances, and career across the country for several miles, as various butterflies are known to do. The life of the insect in the imago state is but short, however, the moth being seen in June or July, the period varying with the temperature.

The eggs of *S. Tiliae* are not very frequently detected by those who look for such insect curiosities, they being generally

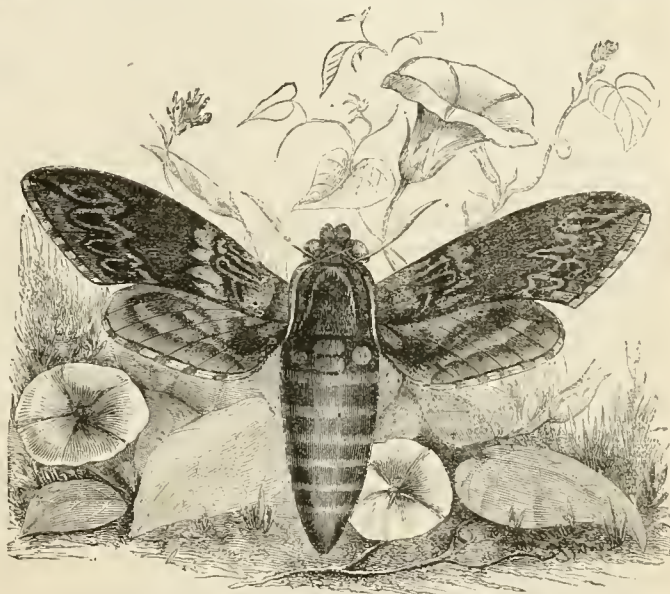


Larva of the Poplar Hawk Moth (*Smerinthus Populi*).

deposited on the branches of the Lime and Elm at some distance from the ground. By a little management the moth has been

induced to deposit eggs in confinement, and the larvæ have been reared from the earliest period to maturity. Like others of the tribe, they hold on to the leaves or twigs when not in motion with so much pertinacity, that if a sudden attempt is made to remove one with the fingers, the body will very likely be torn away, while the claspers are still attached to the object on which the larva was resting. If crawling, they are more easily dislodged, and a high wind in the autumn will bring some to the ground from a height of many feet, no perceptible injury being usually sustained by them if they fall on low plants or amongst grass, though they are not so fortunate as a well-known quadruped, which generally contrives to descend upon its legs. A ludicrous circumstance in the history of these caterpillars is, that after one of their moults or changes of skin they usually devour the exuviae, with the exception of the head—too tough and horny a morsel even for their powerful jaws. Should one of them be annoyed by the near approach of another, he will turn rather fiercely upon the intruder.

The caterpillar of *S. Tiliae* is in one particular quite unique amongst British caterpillars. It has immediately behind the



Convolvulus Sphinx (*Sphinx Convolvuli*).

anal horn a flat plate or ridge, which is of a purple colour, bordered with yellow, and the use of which, if use it has, is unknown. In most particulars, this excepted, the larva of *S. Tiliae* resembles its congeners *S. ocellatus* and *Populi*, having the surface of the body roughened, and yellow dots on the green ground colour, while along the sides are the seven stripes so common amongst the larvæ belonging to the larger Sphingidæ. The anal horn is blue and yellow. This stage of the existence of the insect lasts from six to eight weeks, and during September, or earlier, we may see them crawling towards the earth with the intent to undergo pupation. The chrysalis is not usually closed in a regular cocoon, but the caterpillar seeks out, if possible, some sheltered angle formed by the roots of a tree, and drawing some particles together in a careless way with threads of silk, it becomes a chrysalis. This torpid condition lasts from eight to nine months if the chrysalis be left undisturbed by the gardener's spade or the entomologist's trowel.

A larger moth than the one just described is that commonly known as the Poplar Hawk (*S. Populi*), though in reality, as we find to be the case with other names taken from the food-plant, it might quite as correctly take its name from the Willow, on which it often feeds, and on various species of which I have frequently taken it along the Thames and Lea. The caterpillar also feeds sometimes on the Birch. Laurel and *Laurus tinus* have also been noticed as occasionally yielding it a supply of food in gardens; some instances of this were observed in 1872, though the latter seem unlikely plants for it to resort to. The moth is fond of sitting upon palings near gardens, even if

it has not been bred in such a locality, having doubtless resorted thither at evening's dusk, attracted by the odour of the summer flowers; and then thereafter, having satisfied its appetite, sought a convenient spot to promote its digestion by taking rest—a wise precaution which is not instinctive, unfortunately, in living creatures of a nobler type. The fore wings with their delicate marblings of dark brown harmonise very nearly with the tint of many palings which are innocent of the tar-brush, and even the white dots might pass for tiny bits of Lichen; the reddish base of the hind wings is mostly concealed from view. I have taken a female moth hanging by one leg from the bar of an iron railing in a garden, seemingly in just the position to furnish a choice morsel to some bird. She was not incubating, No! but preparing to lay eggs; and in the course of an hour after she deposited about 150. These are largish, and it is noticeable that through the membrane, before hatching, one can perceive the young larva coiled up, head to tail. The full-grown caterpillar is of goodly size, and striped as in *S. Tilia*, which in colour it also resembles. The anal horn, however, is without any blue. A singular variety of this larva turns up now and then, and is suffused with rosy tints; the moth therefrom is not dissimilar from the ordinary type. Kept in breeding jars or cages, the larvæ of *S. Populi* have a peculiar habit of attacking each other's extremities, and the result is that their anal horns as they grow large appear more or less disfigured.

A moth of right noble proportions is the Unicorn or Convolutus Hawk (*Sphinx Convoluti*), figured on page 261, rather a rare visitant to the garden, but more partial thereto than are many others, being fully sensible to the attractions of the flower beds. Single specimens are picked up in all parts of England, and even near London, more usually in the eastern districts. That it occurs also in the western suburbs I have had proof, since in the autumn of 1871, when passing through a market garden near Putney, I came upon a patch of *Convolutus* which had escaped cultivation, and I at once perceived traces of the jaw-work of some large caterpillar, the bitten leaves affording one proof, and another also still more unmistakable being given by the large pellets of "frass," as the Germans say, which could only have been left by some large *Sphinx*. The only species likely to feed upon the plant in question was that before us; but as, unfortunately for the observer, the caterpillar is apt to hide itself in the day, I instituted a search for it in vain. According to the statements of some it descends to the earth, or even enters it; this at least is certain, that the insect is rarely detected in the larval stages.

The moth has rather a grey and shaggy appearance, the body being well clothed with down; the abdomen has a broad grey stripe down the centre, and pink and black bands on each side. The delicate markings on the fore wings soon disappear after *S. Convoluti* has been a short time on the wing. A friend of ours once received a specimen from Devonshire that had been picked up on a gravel walk, and ere it came into his hands it had been thoroughly washed to remove the dirt, which was effectually got rid of—and also all the scales of the wings.—J. R. S. C.

[For the illustrations from Figuier's "Insect World" given with this paper we are indebted to the courtesy of Messrs. Cassell, Petter, & Galpin, of Ludgate Hill, who liberally placed them at our disposal.—Eds.]

CREOSOTING WOODWORK.

I HAVE read "OBSERVER'S" communication in your issue of the 6th inst. with great interest. I have just ordered the woodwork of a new greenhouse, and I find that I can get the same creosoted, at a place where such work is done as a matter of business, at about the cost of two coats of paint. There is no doubt as to the advantages that creosote would be on the outside, but I always have had an idea that tar and tar spirits exercised a very injurious action on plants. I should feel obliged if your correspondent would say whether he has found any injurious effects upon climbers touching the creosoted wood, and whether any drop that may fall off the wood on a plant burns the leaves in any way.—D.

["OBSERVER" replies as follows:—The creosote, labour, fire, &c., ought to cost about one-third that of a coat of paint. The wood should only remain in the creosote two hours; if much longer the creosote runs out of the wood again. For a house of 52 feet by 15 the whole expense was 12s. I had a

trough and small boiler close by. Everyone knows that if creosote drips on the leaves it will kill them. I have used it for many years without any drawback. After six months, plants may come in contact with the creosoted wood without injury.]

PEAT FUEL FOR GARDENING PURPOSES.

AN answer to a correspondent relative to this subject will be found in another column, and as it is a subject deservedly obtaining much attention now that coals are so enhanced in price, we copy the following from the *Irish Farmers' Gazette*. It will be seen from this that in Bavaria peat is used for heating the boilers of railway engines, and as it is efficient for that there can be no reason for its not being efficient for the gardener's hot-water boilers.

At a meeting of the members of the Royal Dublin Society the first communication was by Mr. Alexander MacDonnell, the subject being "Notes on Peat." The paper dealt with the different descriptions of peat made in Belgium, of which he found the density to correspond substantially with that found in the bogs of Ireland. One cubic foot of peat was found to be equal to 8.7 lbs. of German peat, and varied from 6 to 12 lbs. per cubic foot. Peat in some parts of Germany was dried in sheds, a process which he believed to be very expensive. He explained at length the most approved methods for the production of compressed peat, and expressed his belief that a satisfactory solution of the question of compression would be the making of a great part of the west of Ireland. He observed that nearly all the machines which were used in the peat factories of Holland and Belgium for condensing purposes were constructed upon almost the same principle—of first disintegrating and almost destroying the fibre, and then forcing the pulp, by screw pressure, through a groove, after which it was cut to the required size. The specific gravity of peat manufactured was greater than that of water, and as a rule exceeded the density to which Irish manufactured peat was hitherto reduced. By a machine which he had used hitherto for reducing the raw part of peat to a pulp, the continental principle of cutting the fibre was to some extent resorted to; but by a new machine which he intended to bring shortly into operation the fibre would not be thoroughly disorganised and cut up, but rather reduced by a series of blows to a homogeneous consistency; the machine employed being a slightly modified concrete mixer, in which the blades were set at a slight inclination, so as to produce a sort of screw motion, urging the peat forward to the moulds after it was properly macerated.

A discussion followed, and a member remarked that beyond all doubt in remote districts peat could be utilised to a very great extent, and he hoped it would be; but, at the same time, he personally did not think that they had facts to justify them in coming to the conclusion that it could be made the subject of large commercial operations, to be carried to any very great extent.

The Chairman said that both peat and coal were used on the Bavarian railways in proportion as facility for procuring either offered.

The Chairman asked if the principle of drying peat by heating the sheds had been tried.

Mr. MacDonnell said no attempt had been made at artificial drying that he could discover. If peat was dried too quickly it would crack. It would be well to make some experiments upon the partial drying of peat for the first couple of days. Extravagant statements had been made in reference to the cost of peat. The fact was that there was no machine-made peat, and they had no idea whether machine-made turf was going to cost 5s. or 10s. a-ton. Both figures were stated, and he thought one had as good a right to say 5s. as 10s. a-ton.

[Peat is, perhaps, nearer to us in London than we have hitherto believed, for in *The English Mechanic* we read that "According to Mr. J. R. Scott, the Registrar of the London coal market, an immense deposit of peat lies within seven miles of the Royal Exchange, and within 10 feet of the surface, extending from Bow Creek, Blackwall, along both shores of the Thames to the sea. This only requires to be 'dug, dried, and scientifically treated' to add a valuable fuel fit for all and every purpose for which coal is now used. This is good news; but who will 'dig, dry, and scientifically treat' this fuel, and sell it, cheap?"

DEATH OF MR. JABEZ J. CHATER.—We regret to have to record the sudden death of Mr. Jabez J. Chater, of the Gonville Nurseries, Cambridge, on March 19th, from heart disease. The deceased was the fifth son of Mr. W. Chater, the celebrated raiser of prize Hollyhocks, and it is not too much to say that to him may be attributed a good deal of his father's success with that flower. For the last ten years Mr. Jabez J. Chater has been at the Gonville Nurseries, Cambridge, where he has been the

most successful exhibitor at the various exhibitions in that and the adjoining counties. He was a most diligent and ardent lover of floriculture, and had on many occasions exhibited successfully at the great shows of the Royal Horticultural Society in London and the provinces. He was a successful hybridiser of Geraniums, his Forget-me-not being one of the best of its class.

THE HYACINTH SHOW AT SOUTH KENSINGTON.

As the readers of this Journal are aware from the report given last week, this was characterised by great excellence. Tulips were very gay in their gaudy colours, and were probably finer than usual. Crocus and Polyanthus Narcissus helped to give interest to the meeting; but the great centre of attraction was the Hyacinths. The spikes were, I think, the finest ever seen at any exhibition, they certainly gave evidence of superior skill in culture; but, on the other hand, the new varieties, which are now becoming more common, are a great advance on those which used to be staged some ten or fifteen years ago, and help very materially to improve the collections in which they are placed. The Hyacinth is one of the oldest of florists' flowers, and has been undergoing improvement before the very oldest grower or his father saw the light, so that any improvement must be slow, and to the ordinary observer imperceptible, but that there has been improvement during the last decade no one can doubt who has been at all observant.

Only three new varieties obtained certificates on the 19th. All of them were single blues of different shades. Mazzini, from Messrs. Veitch, has bells of immense size, of a porcelain blue; the spike moderate. Lord Melville, from Messrs. Cutbush, dark blue and clear white eye, is a very distinct sort. Prince of Wales, which I exhibited, is also a very distinct sort, very dark blue, with well-shaped bells and compact spike. The bells of this sort are sometimes striped red. If we go back to 1863-4, when that grand sort King of the Blues was introduced, in the intervening years a marked improvement will be noticed both in the size of the spikes and in new colours, although, however distinct and pretty a variety possessing a new shade of colour may be, it will not do for exhibition if it do not also possess length and breadth of spike. Sir Henry Havelock has a good spike, and the colour is purplish crimson, it may be taken as the greatest advance in colour. Vuurbaak, brilliant crimson, has a grand spike; and no white is at all equal to La Grandesse when it is at its best. I might name others, but these all show recent progress.

Double varieties are not being improved in the same ratio as the single, and they seem to be displaced at the exhibitions by the single varieties. I admit the single sorts have the most symmetrical spikes, but the double are very beautiful. They deserve and ought to have a class to themselves. Some very fine sorts that are not now seen would be shown. I should not like to see any of the classes in the present schedule of the Royal Horticultural Society omitted, and if the Society did not see fit to introduce a class for doubles, why could we not do it ourselves? Funds might very soon be forthcoming to make a class both for the trade and amateurs. I would willingly subscribe for such a purpose; but I would only do so on condition that the rules for exhibitors were made more stringent than those contained in the schedule of the Society. I think it highly desirable that gardeners should purchase the bulbs in the autumn, pot them, and grow them up to a flowering state under their own or their subordinates' care. At present this is not at all an essential point. A gentleman or his gardener may go to any of the large growers in the trade, purchase his plants a week or a day before the exhibition, and carry off the first prize—certainly not first honours—they belong undoubtedly to the gardener who exhibits the best plants of his own growing; and there are some to whom "a good name is better than great riches, and loving favour rather to be preferred than silver and gold." In fact, I am in a position to say that the amateur grower who carried off the first prizes at South Kensington obtained his plants from one of the large trade exhibitors after the bulbs had been potted and cultivated to a certain extent by their grower, and he might have had them two months or only two days before the Show, yet he was, according to the present regulations, entitled to the award. In a case like the above there cannot even be a division of honour. An exhibitor should and would be proud to take an opponent by the hand and congratulate him on his success if honourably beaten by him. When there is room

for suspicion he cannot do so. To slightly alter a passage in "Marmion"—

"The hand of Douglas is his own,
And never shall in friendly grasp
The hand of such a rival clasp."

This is a matter on which the Editors of this Journal should give an opinion. For my own part I would scorn to exhibit a flower or fruit that was not grown entirely under my own care. If some stringent provisions against such unfair proceedings are not adopted, it is quite evident that respectable exhibitors will have to withdraw entirely from exhibiting. Let us if possible have a full and free ventilation of the subject; it is, I think, of great importance.—J. DOUGLAS, *Loxford Hall Gardens.*

[This is not the first time we have received information relative to persons (we will not prostitute the word by calling them gentlemen), who have bought flowers from florists, and a few days subsequently have exhibited them for prizes. We have the name of the person who is referred to by Mr. Douglas, and unless we have satisfactory information we will publish his name and where and when he bought the Hyacinths.—Eds.]

MR. LITTLE'S CYCLAMENS.

THE same day that I visited Lord Londesborough's new garden at Coombe I took the opportunity of calling at Mr. Little's at Cambridge Villa, Twickenham, in the hope of finding him at home and having a chat with him about his wonderful Cyclamens. In this I was disappointed, as he was not at home; but I found Mr. Goddard, and was enabled to see his house filled from one end to the other with these lovely spring flowers; and as I walked through what is simply a little villa garden, I could not help observing that it is so often in small and not in large gardens that the lover of flowers finds his pets so well taken care of. One goes through a large place, the garden comprising many acres; houses upon houses are filled with plants, fruits, &c.; and while everything is well done—the plants well grown, the Vines filled with a good crop, the various quarters of vegetables well arranged—there is nothing that stands out especially good—there is, in fact, no *spécialité*. But you go into a small garden. The owner has a hobby, and away he goes at it full speed. His energies, instead of being expended on many things, are concentrated on one object, and he therefore excels in it; or it may be he takes up two or three flowers, which in succession claim his attention, and if you want to see these different plants you must go where they are grown.

No one who has attended the spring shows of the Royal Horticultural Society need be told that the specimens of Cyclamens exhibited by Mr. Little take the very foremost rank; and those who were at the exhibition on March 5th will not easily forget the splendid bank of plants of varied hues which were displayed in the entrance-hall. These all came from a span-roofed house about 30 feet in length, which on the day of my visit was filled from one end to the other with a glorious collection of plants, in colour pure white, rich purple, dark crimson, white with crimson base, pale blush, &c., of immense size and substance such as a few years ago would have been considered impossible. Indeed, we recollect the time when it was exceedingly difficult to procure the corms, and when all sorts of "dodges" were recommended for the purpose of increasing the stock; and now in less than ten months plants are obtained from seed which will carry forty or fifty blooms. The manner in which this result is obtained is now well known. The plants are kept continually going, grown in tolerably rich compost, kept near the glass, green fly narrowly watched for, and, in fact, everything done to insure rapid and continuous growth. Mr. Little is exceedingly careful as to hybridising; and as he names his best flowers, he is able to trace the pedigree of those which he is raising from year to year, and thus to insure an advance as far as it can be done. This is much better than the plan ordinarily pursued of gathering seed indiscriminately from the whole collection; and if those who save seed for sale were to adopt the same plan there would be finer flowers in general cultivation than are now seen.

It has been stated by some writers on the Cyclamen that the plants are comparatively useless after the second or third year, and I asked Mr. Goddard his opinion on this subject. He replied by showing me some plants which were eight years old. The corms were enormous, nearly filling the pots, and the flowers produced in great profusion, thus clearly establish-

ing the fact that old plants need not be thrown away. I will not expatiate on the value of this very beautiful spring flower; it is so useful for decorative purposes and for cutting for bouquets.—D., *Deal*.

A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 6.

CŒLOGYNE.

This is an extensive family of eastern plants, many of which succeed admirably under cool treatment. Most of the kinds produce very beautiful flowers, and some are most delicately perfumed. The treatment recommended for *Maxillaria* will suit these well.

C. CRISTATA.—The whole plant is rich deep green in colour; the flowers are large, and produced on pendent racemes during the winter. In some cases, under good management, two racemes spring from a single pseudobulb. The sepals and petals are of the purest snow-white, so also is the lip, but in addition it is ornamented with several raised fringed lines of orange yellow. Native of Kasia and Nepal.

C. CORRUGATA.—Although the flowers of this species are not so large as those of *C. cristata*, they are, nevertheless, sufficiently interesting to warrant the attention of amateur cool Orchid growers. The pseudobulbs are much wrinkled, and bear ample dark green leaves. The raceme is about half the length of the leaves; sepals and petals pure white; lip white, blotched with yellow and streaked with deep orange. Native of the Neilgherry Hills.

EPIDENDRUM.

A really vast genus including several hundred known species, many of which are extremely beautiful, whilst others, again, are extremely dull and unattractive; yet even some of the least interesting make amends for want of colour and size by the exquisitely delightful fragrance of their blooms. Naturally, most *Epidendrums* are epiphytal, but the majority of them conform to pot culture very well. Use sphagnum moss and peat in about equal parts, and if medium-sized lumps of charcoal are employed, they will greatly conduce to healthy growth. The following two are all I shall introduce in my selection for small amateurs:—

E. VITELLINUM MAJUS.—An extremely beautiful kind of easy culture. It has oblong pseudobulbs bearing a pair of glaucous leaves. The flower-scape is about a foot long, bearing flowers an inch or more in diameter; the sepals and petals are thick and fleshy, brilliant deep orange, or yolk-of-egg colour, the lip yellow. Its colours are rare amongst Orchids, and the flowers last a very long time in full beauty. It usually blooms during winter and spring. Native of Mexico, at great elevations.

E. NEMORALE MAJUS.—This is another superb Mexican variety. The pseudobulbs are very large, bearing a pair of leaves some 10 or 12 inches long. The panicles of bloom are very large, often measuring between 2 and 3 feet in length,

sometimes even more. The numerous flowers are soft rosy-mauve, the lip, in addition, being streaked with a few lines of red. It is found growing in Oak forests, at great elevations, in Mexico.

CYPRIPEDIUM.

The various species comprising this genus are popularly known as "Lady's-slipper Plants," or as its name implies, Venus's Shoe, the peculiar pouched appearance of the lip having suggested the name. *Cypripediums* are favourite plants with most Orchid growers, and may be easily grown into good specimens. They thrive in a mixture of peat, sphagnum, and sand, and during summer enjoy copious waterings from both the watering-can and syringe; it must be borne in mind that having no pseudobulbs they cannot withstand much drought. The only three kinds I can recommend for low temperatures are here given, and they are sufficiently hardy to withstand unharmed the temperature of the dwelling-house for a long time.

C. INSIGNE.—A free-growing old plant. The leaves are long, strap-shaped, and light-green. The scape bears a single flower which lasts in full beauty five or six weeks with ordinary care, and as it expands about the end of December, the bloom is doubly valuable as serving to enliven the dull winter days. The upper sepal and the petals are yellowish green, the former large and tipped with white, the ground being freckled with brown spots; the pouched lip is brownish orange. Native of Sylhet.

C. INSIGNE MAULEI.—This differs from the normal form of the species in having a smaller lip, and in the dorsal sepal being much larger and brighter-coloured. The snowy white markings extend fully half the length, whilst, in addition, it is streaked with crimson and dotted with dull purple.

C. VENUSTUM.—Leaves light green, blotched with deep blackish green on the upper side, purplish below. The flowers are solitary, sepals and petals greenish white, whilst the pouch is yellow suffused with pale green. It also blooms during the winter. Native of Sylhet.

DENDROBIUM.

This is entirely an eastern genus, and it includes several hundred species, the

majority of which are exceedingly beautiful and showy. Many of them succeed best grown upon blocks or in baskets, and thus produce a pleasing effect in the plant house, in addition to economising space. In many instances *Dendrobiums* require the temperature of the warm house, but the species here enumerated thrive well under quite cool treatment. The soil should be rough peat and sphagnum, with ample drainage. During winter only just sufficient water should be given to keep them from shrivelling.

D. NOBILE.—This is one of our longest-known members of this order, having been introduced to this country about the year 1836, and it still maintains its position as one of the handsomest. It blooms at various times during winter and spring, and lasts long in beauty. The flowers are admirably adapted for the embellishment of a lady's hair, especially when backed by a small frond of some graceful Fern. It is an



Dendrobium nobile pallidiflorum.—(Bot. Mag.)
(See page 265.)

erect-growing plant, with stout leafy pseudobulbs, bearing towards the upper part two and three-flowered peduncles of a lovely description. The blooms are thick and fleshy, measuring upwards of 2 inches in diameter, the sepals and petals white, rose, and purple, whilst the lip is purplish red. There are several varieties of this plant in cultivation (one of which,

differing from the typical form in several particulars, and especially in the absence of the blood-coloured spot on the lip, is figured on the preceding page), varying more or less in colour and markings, but all are beautiful, and deserving the amateur's attention. It is widely distributed in northern India.—*EXPERTO CREDE.*

VIOLET VICTORIA REGINA.

We were about publishing this unexaggerated portrait of some of the Victoria Regina Violets exhibited by Mr. Lee, of Clevedon, at the Royal Horticultural Society's Meeting on the

19th inst., when we happened to meet with these brief notes upon the flower.

Violets! deep blue Violets!
April's loveliest coronets



Victoria Regina Violet.

are emblems of modesty, and wittily as well as wisely did that lady who chose the Violet for her crest, with the motto *Il faut me chercher*—I must be searched after. The ancients did not fail to note the habit of the flower, whose perfume led to its detection beneath the leaves, so they named it Ion, and said that it was the nymph Ia who shrank from the kisses of Apollo (the sun), and was for safety changed to a Violet. Violets were sold largely in the Athenian floral market, and the Roman earlousers wore chaplets of them to dispel the consequences of their excesses. Double varieties of both the white and purple are mentioned by some of our earliest herbalists. Many florists have succeeded in increasing the size of the flowers, but none have been more successful than Mr. Lee. Many

have succeeded in increasing the size of the flowers, but no one has intensified the sweetness of the common wild Violet. No better evidence of the power of its perfume can be given than that of the huntsman, who when asked what had thrown the hounds off the scent, replied, "That bank of stinking wilets."

In VICTORIA REGINA Violet, the variety which we now figure, we have a Violet not merely remarkable for the great size of its flowers, but very sweet-scented as well, a quality not always possessed in a high degree by large-flowering varieties of this plant. Large flowers are but too often wanting in scent, large fruit in flavour, and it would seem that Nature in developing one quality to an unusual extent had to do so at the expense

of another. Be this as it may, *Victoria Regina Violet* is a very queen among Violets, and as it has already produced several seedlings varying much from the parent, we know not whither these variations may lead; but if the advance in size be as great on the parent as the latter is on the ordinary Violet, "we may," as we previously remarked, "expect to see varieties rivalling in size the florists' Pansy."

With regard to Violet culture, Mr. Lee remarks, "The soil, I think, cannot be made too rich, provided it is light and porous; with this there is no lack as to quantity or quality of bloom. Soil is, I think, much more important than aspect, although aspect must not be overlooked. A position to the north of high trees, and not subject to the drip from them, I find the best; many of my plants are to the north of such trees with naked stems, so that the sun shines underneath in winter, but they are shaded in summer. If, however, the soil is deep, light, and rich, they will bear a considerable amount of sunshine."

"I must not quite omit the time of planting. If the plants you procure are not in pots I think September the best time; but if you plant in winter, or in spring after growth commences, it is necessary to cut off all the young leaves. I find the plants do very well planted in any open weather from September till April."

"I plant my Violets at 18 inches apart in beds of three rows each; this affords room for hoeing the intervals between the rows while the plants are growing. I sometimes plant them at 6 inches apart, sometimes at 1 foot apart in the rows, just as I have a large stock of plants or otherwise. They soon spread and fill the beds; but they ought not to remain more than three years in the same place, unless you take off the runners and add manure liberally, otherwise you get the flowers small and short-stemmed. The outside rows of the opposite beds ought to be 2 feet 6 inches apart; this gives room for a 1-foot path between the beds, which, if the plants do well, will not be too much."

EVENING MUSINGS FOR PLAIN PEOPLE.—No. 3.

Nor Vines alone are the subject of these papers, which are intended, not for professional gardeners and their exalted employers, but for the great middle class with gardening proclivities, who hesitate in their plans from want of assurance on given points. The point in question is, What can be grown with Vines?—not grown to a pitch of absolute perfection for exhibition purposes, but cultivated as a pleasure and recreation to contribute to the attractions and happiness of home.

As has been noticed, bedding plants and spring-flowering subjects generally are at home with Vines, and Camellias as a special class have been mentioned as peculiarly adaptable for vinery occupation. In themselves few things are more beautiful than a collection of Camellias. They are at any time worthy of a house to themselves, erected specially to meet their cultural requirements. These structural conditions are simple, and resolve themselves into shade and moderate heating appliances, sufficient to exclude frost in winter and impart a more genial warmth in spring. These conditions are provided exactly by an ordinary vinery, the Vines themselves affording the shade. A vinery, therefore, is a Camellia house as good as need be. I lately saw a vinery nearly the size of that at Hampton Court; the roof was covered with foliage, but there were not more than 100 lbs. of Grapes in the house. What was to me a blank disappointment was not so to the owner, who remarked that the Vines did their duty well by shading the Camellias. What a grand sight must be that huge house of Camellias when in full bloom! and what a rich appearance has even a small house of healthy Camellias! But that large structure would have grown the Camellias equally well had the roof been covered with fruitful instead of unfruitful Vines. If my visit should result in this I shall be glad, and the owner surely can enjoy his Camellias none the less if rich clusters of Grapes hung above them.

It is, I am quite aware, the desire of many to put up a vinery for a few home-grown Grapes, although they cannot endure the thought of empty stages in the summer. They see a neighbour's house with greenhouse plants and Vines. The latter are very well, but look at the plants—*Pelargoniums* as if attempting (which they are) to push through into the open air, and most likely sustaining a live stock of ten thousand fat (and lean) aphides; *Fuchsias* with shoots blanched and attenuated, crawling, and hanging, and writhing in misery, with a little paltry bloom squeezed out here and there, of course

carrying the live stock; Balsams long, lanky, languishing, and leaning for support on their feeble friends in distress, attempting to derive a modicum of comfort in a prison of misfortune. That is a too-common picture of an amateur's vinery in summer, and serves as a text to unpractical visitors that plants and Vines will not associate together, and has often decided the fate of a projected building, as well it may. Empty benches are infinitely preferable to such a miserable mass of unsuitable plants driven wild in their desperate attempts to get out of it.

"Come and look at our vinery," said a gentleman and his daughters, "and tell us what to do; we cannot get a plant for the drawing-room worth looking at," with a special supplementary grumble from paterfamilias of, "I hate the place! Thought I should have everything, and have nothing. I can do in winter and spring with bulbs, Primulas, and the like, but now I hate to look at it; it is a wilderness of desolation." He was not far off the mark. They did not expect a great deal, but the house to be "decent." My first advice was to have some Camellias, especially white ones; in the spring they will charm the ladies, and in summer, only keep them clean, and they will be healthy and glossy. The rejoinder to this was, "You gardeners are all alike. That is just what my man wants; but if he cannot grow easy things like these, how can he grow Camellias?" I am afraid that against such logic many an industrious man has to battle. But pressing the Camellias and demolishing the logic at the same time, and pledging my little reputation that with fair treatment not only Camellias but a few Azaleas, after the beauty of bloom was over, would keep the place neat and themselves within bounds under the Vines; that hardy and greenhouse Ferns would do admirably in the house and look well in the rooms; and that Palms—healthy young plants of the hardiest kinds were the very things they required—would do well in the vinery, and look charming for in-door decoration. At the sound of Camellias, Ferns, and Palms the daughters' eyes brightened with delight as just what they hoped and longed for. They pressed their claims in their own way, and the owner's opposition completely collapsed. What a pleasing and enjoyable change was the result by just putting the right things into the right place! The Grapes above were as good as ever—yea, better, as the plants, being more valued, received more regular and constant attention in watering and syringing, and created an atmosphere more suited to the Vines.

Vines and plants will only not flourish together when wrong plants are put under the Vines. Select the right ones—plants requiring, or at least tolerating shade, and amongst these are to be found the most beautiful and interesting genera, and a house may be always attractive without counting the value of the Grapes.

There is yet one more great order of plants to which shade is indispensable in summer, and which with good attention will attain a high state of perfection under Vines. These are perhaps the most singularly beautiful, interesting, and valuable of all plants—viz., Orchids. That a judicious selection of this order will flourish admirably in conjunction with Vines has been clearly demonstrated, amongst others by my former fellow pupil, Temple, late of Headingley, whose practice has been detailed in this Journal. The temperature required by many varieties of Orchids is the same as required by the Vines. Atmospheric moisture is in the same degree necessary to the summer growth of both, and the period of rest required is sufficiently identical for practical purposes. Any or all the plants which have been named will, with proper attention, afford a return commensurate with the skill and attention given to cultural points of detail, and at the same time will not interfere with the Grapes, which may certainly be produced above them. A main condition necessary for success is not to attempt too much by overcrowding. A few plants grown well will ever be more satisfactory than many in an indifferent state. In the matter of overcrowding, amateurs do not err alone. In this respect there are sinners amongst professional gardeners, who, in their anxiety to get the utmost with small conveniences, occasionally overstep the mark and defeat their object. This is not to be wondered at, considering the difficulty at times of deciding when and where to stop. The wonder is that so much is produced under crippled circumstances by able and thoughtful men. But what the professional man can do, the amateur may do also in a less degree, by cool calculation beforehand and steady regular action afterwards, provided—and this is a main element of success—he has a real love for his object and a will to work, not by fits and starts, but just when the work is needed, and not simply when his fancy dic-

tates. At any rate, there can be no manner of doubt that Vines and plants may be grown well together, and many a house may be erected which would add considerable attractions to a snug and happy home.—J. W., Lincoln.

WORK FOR THE WEEK.

KITCHEN GARDEN.

At the time of earthing-up any of the crops strew a little soot close to the stems of the plants; this will prevent slugs harbouring there and biting them off under the surface of the soil, which they are very apt to do in this early part of the season. Loosen the earth between all the winter-standing crops, and keep every part of the garden free from litter. When Peas or other plants are frozen, water them very gently with cold water as soon as the temperature of the atmosphere surrounding them is above the freezing point, but never before, or by its application the juices of the plant will be more effectually frozen than they were previous to the application of the water. The general spring dressing of *Asparagus*, if not yet done, should no longer be delayed, as the roots will now begin to grow. A little Early Purple and Early White *Broccoli* may be sown for autumn use, but Cape and Grange's almost supersede the use of any other sorts for autumn use. Make a sowing of *Brussels Sprouts* for the first crop: this is an excellent vegetable, but rarely to be met with true. Plant out some of the early spring-sown *Cauliflowers* as soon as they are of sufficient size to succeed the autumn-sown; earth-up the early-planted as soon as it can be done, so as to prevent the wind blowing them about to loosen them. Take advantage of a fine day to draw the earth round the hills of *Cucumbers* after it has lain a day or two by the side of the frame to get warm; do not press it down round the plant. As soon as the heat is observed to fall, fork up and add to the linings; or, if the heat is entirely out, renew the lining first made. After a continuance of dull weather the plants are apt to flag for the first few clear days; when this is observed they may be slightly shaded. *Herbs* should now be propagated, seeds being sown of the annual sorts, or of such as do not supply cuttings nor admit of being divided. Get in the main crops of *Potatoes* where the ground is in good working order, otherwise no time will be lost by waiting till such is the case. Plant in trenches or drills drawn with the hoe in preference to dibbling them in. A little dryish litter laid under and over the sets will be found to increase the crop very materially. Keep-up a succession of *Salading* by sowing once a week. Young *Radishes* may be drawn from the frames where they are too thick. Sow a few rows of *Spinach* for succession, limiting the supply to the demand, as it is a surs crop and one that does not last long. *Pot Tomatoes* as they require it, so as to get good established plants by the time the weather will permit of their being turned out, for if very small at that time they seldom ripen their fruit well before the frost sets in.

FRUIT GARDEN.

See that recently transplanted trees are not suffering from want of watering. This, however, will hardly be the case except on dry porous soils, and in such cases the ground should be mulched with decayed leaves to preserve it in a uniformly moist state. Attend carefully to the protection of the blossoms of all fruit trees where nothing better or more convenient can be obtained. Yew or spruce branches will be of service, provided they are so fixed as not to be liable to be blown against the blossom. Remove the covering as frequently as may be convenient on fine days, so as to fully expose the trees to sun and air. Get a supply of tobacco water in readiness to attack aphides immediately they make their appearance on Peach trees.

FLOWER GARDEN.

All new groundwork, such as planting and turfing, must be finished as expeditiously as possible, and as soon as all rubbish has been cleared from the borders, &c., prepare for trimming the walks and making them clean for the season. This, though an operation readily performed, is frequently tarried over and badly executed. A walk after it has been turned, levelled, and the facing of new gravel laid upon it, should remain in that state three or four days for the gravel to bleach, and not be rolled until it has a shower of rain upon it. The utility of this plan is, the gravel becomes washed before it is rolled down, and you have a clean, bright walk at all times instead of one sticking to your feet and falling into holes in wet weather. This delay causes inconvenience while the work is being done, but it is fully counterbalanced by the excellence of the walks throughout the season. Birds are very troublesome to early germinating seeds, and where it is inconvenient to cover with netting it will be well to sprinkle the beds with sand made wet with spirits of tar. The transplanting of all autumn-sown annuals should be completed without delay, also of biennials. Prepare for a sowing of the latter a piece of ground, which must be slightly enriched and dug to a good depth. In the shrubberies the work for the season will be finished, except attending to newly-planted shrubs and watering them when necessary. Take care that all newly-planted

shrubs and trees are properly staked before they begin to make new roots, and mulch them with short grass occasionally when the lawn is mown. Auricula flowers are putting on an improved appearance; still keep them warm at night with mats, and as they are growing they should have a moderate supply of water. Last year's seedling Polyanthus are now throwing up their trusses and "showing their faces;" those which do not come up to the mark should be pulled up or planted for border flowers in the shrubberies or elsewhere. Seed of *Ranunculus* is now coming up fast; shelter from cutting winds, and if any are rooted out of the soil, which sometimes is the case, they must be carefully reinserted. Where practicable, the beds of named flowers should be covered with mats when frost is expected. Potting Carnations has commenced in many parts of the country, and where the plants have been brought up hardy the sooner they are out the better; as a precaution, place a slice of potato between the rows, if two are planted in a pot, so that they may have a chance of avoiding destruction should a solitary wireworm escape you. The beds of Pansies may be top-dressed with Melon-bed manure, and screened from the prevailing cold with spruce fir boughs or other efficient protection. Snails must be trapped, as they begin to be seriously troublesome.

GREENHOUSE AND CONSERVATORY.

To keep the conservatory now in perfect order you must go over the plants daily, or at least every alternate day, and take out those beginning to fade. Pick-off all decaying flowers and leaves, also all distorted flower-buds, or, indeed, any small or ill-arranged flower which does not look well. Change the plants in sitting-rooms often, if they are worth preserving afterwards. Fuchsias represent that class of greenhouse plants which do best to be shaken out of their pots annually, but as the strong varieties of them are gross feeders, you may use a rougher compost for them. A thorough revision of plants in the different houses where plant-growing and forcing are carried on in a mixed way is necessary some time during spring, and the present is as good a time as any for the operation, the shutting-up of late vineries or Peach houses generally offering facilities for the arrangement, and, of course, for relieving the other structures. Exhausted forcing stock should by all means have a pit or frame fitted-up especially for it. It should by no means be allowed to mix with the general stock. The amateur may carry out this principle with a small frame. A bed of fermenting material of a mild character, covered 6 or 8 inches deep with tan, and well topped-up with linings and mats at night, is what is required. A bottom heat of 80°, with frequent syringing, and the plants plunged, of course, will restore them to perfect health and prepare them for another campaign. Cinerarias for late blooming should, if not bound, be shifted. Likewise let plants in need of water have immediate attention; nothing conduces more to the encouragement of insects than suffering plants to become checked through drought. By starting Camellias into growth about this time, and getting their wood ripened early, they will be in full bloom in November, at which season their flowers retain their beauty much longer than after the sun becomes powerful in the spring. Proceed as diligently as possible with the repotting of such of the hard-wooded greenhouse plants as require it, so as to afford every chance of making a vigorous growth. Be careful before potting to have the ball in a moist state, and avoid giving large shifts to weakly growers.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

PLANTED Peas and Beans for succession in rather favourable days. Placed more Potatoes under the shelter of glass for a time, and we hoped to get ground ready for Onions, when we had a heavy fall of snow on the 21st, and a sharp frost on the morning of the 22nd, all tending to make the season a very late one.

Cauliflowers under glasses we shall soon thin-out to five plants, as we find that, instead of the regulation three, we can do five well when spread out in the earthing-up. When scarce of ground we dig a trench between the rows of such protected Cauliflower, so as to earth the Cauliflowers well up, we then cover the ridges of Cauliflower with short grass or other litter, and give several manure waterings; thus we obtain large, clean, compact heads, the trench being no objection whatever, so long as the surface and the sides of the broad ridge containing the Cauliflowers are mulched. Besides, the trench between comes in well, with the help of rotten dung, to afford space for some early Celery, the shade of the fine foliage of the Cauliflower helping the Celery much after planting-out early.

We have often dwelt on the importance of not curtailing the extent of the kitchen garden. That will pay, whatever else returns nothing except to please the eye, much in the same way as we put a value on statuary or fine paintings. But with all that, there is many a small kitchen garden that might return double the produce it does by successional cotemporary cropping in the same ground. Thus, in the case of the Cauliflowers referred to, many have supposed when the plants are put out on

the flat, say three or four rows under hand-lights or other protection, and then banked-up into ridges so as to leave a trench between, that the plants as they become large would feel the effects of dryness. When mulched or littered over, even without additional watering, we have never perceived anything of this; on the contrary, when leaving early Cauliflowers on the flat with merely a little earthing-up, neither foliage nor heads were so fine as when the early autumn-planted crops were subjected to earthing-up, so as to form a sort of flat ridge.

Then, again, in small gardens we have recommended not rows but beds of Celery; our general arrangement is to have 4-feet sunk beds or trenches, and 1 to 5-feet ridged beds between. If these can be made early, a row of Peas is sown along the middle of the flat ridge, with Spinach and Radishes on each side. Here we may state that after the ground is marked out, the place for the broad ridge is well dug, and a little manure if needed is incorporated with the soil before the soil of the part intended for the beds is thrown on the top of these ridges neatly. We wish to record here, in opposition somewhat to the general belief, that we have never had better Peas, or plants more free from mildew and other evils, than when grown on the middle of such raised ridges and platforms. The greater depth of good soil made the Peas more independent of the changes of the season, but in a very dry summer a mulching of short grass was thrown over the ground, or the surface of the soil kept loose with the hoe to arrest the absorption of heat and the excessive evaporation of moisture. The beds, meanwhile, with a little protection, were used for early Potatoes, Radishes, Lettuces, &c., to be cleared off before the space, manured with more rotten dung, was needed for the Celery. We used to follow this plan largely at one time, and it was only broken-in upon when we were obliged to use Celery trenches as beds in which to harden-off bedding plants. One extra great advantage of the wide-bed and the wide-ridge system as thus used is, besides the saving of ground, the shade afforded by the rows of Peas to the early-planted Celery whatever the direction of the beds, though on the whole we prefer them to run somewhat north and south.

We allude to the matter more particularly because much space is often wasted in small gardens. It is often essential not only to practise rotation-cropping, but also *cotemporaneous cropping*—that is, having several crops on the ground at one time, and yet having the one removed before it will interfere with the well-being of the next crop in succession. At one time we found that different successions of Radishes crisp and young were a matter of importance; but under glass in winter and out of doors in summer they never had a bit of ground for themselves, but were brought in between Carrots, Potatoes, or Turnips. In fact, even in the open air, we rarely sowed Turnips 18 to 24 inches apart in drills without having several kinds of Radishes in lines between them, all of which would be removed before the Turnips would need the room. The same thing may be said of Spinach, a great favourite in many families, and if vegetables are to be sent to a distance in summer, a good packing material for keeping things separate, and yet useful withal. As respects this useful vegetable, except what is sown on an open space of ground in August and September, to stand and afford gatherings in winter and spring, all our general sowings come in as intermediate crops between Peas and other vegetables, the crop of Spinach being cut-up as soon as the best is gathered, before it would interfere at all with the more lasting or more valuable crop. Thus, on Celery-bed ridges, after using the best of the Spinach, we have often cut it up, when it acted as a fair mulching to the Peas until something better could be obtained.

At one time we turned our Celery beds to great account, as by putting a little hot dung at the bottom and dryish soil over, we could turn out nice Potato plants from small pots, the pots full of roots, and the Potatoes 2 to 3 inches in height, as with one row of Peas in the centre of the 5-feet ridge we could manage to walk along each side to give what protection was needed to Potatoes thus turned out in March. In general we could obtain clean ripe tubers from such beds in May and June, three weeks earlier than we could obtain them from favoured spots at the bottom of a wall, and a month earlier than from those planted out early on raised banks facing the south, though in some warm springs the produce from these banks would come in only a fortnight later than that from beds. In protecting such sunk beds we found nothing better than mats or calico lightly strained, both being fastened to poles at each end for rolling up, and stakes laid across the beds to prevent the covering sinking.

We had also a lot of shallow earth pits in an out-of-the-way corner where we hardened-off our bedding plants, and which were never idle in winter or summer for low-growing plants after the bedders were gone. Deprived of these we have had to go to our fresh-made Celery beds as places for *hardening-off bedding plants*, and therefore cannot use the beds for early vegetables, and cannot use the ridges so well for early Peas, as, in attending to the bedding plants, there must be more room for working, and the beds would only be fit for Celery by the beginning of June. Where such necessity does not exist, these

wide beds may be turned to good account in securing early produce. Between Potatoes planted across in rows 20 inches apart, we have sowed in one bed two rows of Radishes, in another bed planted one row of stout Lettuces, and so on, and all was cleared off, more rotten dung added, and the Celery plants turned out in the middle of June, the Peas, as hinted above, just giving enough of shade to the young Celery. Had we more ground we would make our Celery beds 4 feet in width, to take three rows of Celery, and we would make the ridges between 6 feet in width, as that would afford more room for gathering the Peas; and the dwarf crops at the sides, whilst they lasted, would not interfere with walking between the rows to attend to the Celery. Let us here add, from considerable practice and observation, that most gardeners must try and make the best of circumstances. There is not one in ten who can exactly follow out the plans which he knows would be the best in his peculiar position.

FRUIT DEPARTMENT.

Owing to the press of garden work we are behind with all our hardy fruit department out of doors. As to orchard-house trees see remarks of last week. We shall reserve our little space to refer to two matters which correspondents have brought conspicuously under our notice.

Potted Trees.—"SIGMA" tells us that he can get trees of Cherries, Plums, Peaches, &c., in 8-inch pots, and he can have similar trees taken out of the ground that would be cheaper at first, and cost less for carriage than those in pots, and he wants to know whether, by having these trees lifted and carefully and firmly potted, he might not expect as good a crop this season as from the trees all along grown in pots, as the pots seem so small that the trees would appear to require repotting to give enough of nourishment to the fruit. We say decidedly, No. These taken-up trees would actually succeed better if planted carefully out of doors than when thus repotted. How it is we cannot exactly say, but the fact remains that all plants in pots bloom, seed, and fruit best when the pots are full of roots, and until this condition be arrived at there will be a tendency in the blooms and fruit to fall. We several times obtained good supplies of fruit from Cherries, Plums, &c., raised out of the ground and potted in the middle of March, but we gave them extra attention. First of all we put them in the smallest pots in which we could get the roots, and packed them neatly and firmly, and then for three weeks or a month we plunged the pots overhead in a slight out-door bath of from 65° to 70°, and kept the tops as cool as possible in a shady place, the object being to encourage fresh rooting and keep back the buds. The plants were moved to the orchard house when the heat of the bed declined, so as to be little warmer than the orchard house. Too much heat, even at the roots, would nullify the beneficial effect but a little at first, and the small pot would encourage the formation of fresh fibres to sustain the swelling buds and opening and setting blooms. Where such means cannot be carefully followed up, it would be best to depend little on the first season after potting, and to look forward to the second, in which case larger pots may be used for the roots. It would be a different affair if such trees had been taken up in October or November, potted and plunged in a bed in the open air, the bed being from 5° to 10° warmer than the general atmosphere. Under such circumstances, whilst the heads would be cool in the open air, requiring little protection, except a net to keep birds from the buds, the pots would be well supplied with fresh fibres by the month of March, and these roots would make a great point of success. Owing to the simple fact alluded to, if our correspondent obtains trees in 8, 10, or 12-inch pots, if he expects fruit from them to any extent in the ensuing summer, he should keep the trees in the pots until the fruit is gathered before he places them in larger pots. These things he may do with advantage: He may knock a good portion of the bottom of the pot out, he may even crack it along the sides, so as to let fibres out, and then he may sink the pot into one, two, or three sizes larger, and supply rich compost to the bottom, the sides, and over the top of the old pot; or he may, after so serving the old pot, plunge it an inch or so over the rim in the ground, with rich compost all round it, and in either case labour in watering, &c., will be saved, and the main part of the roots still pressing against the sides of the pot will so far secure free blooming and free setting, whilst the fresh roots that extend beyond the pot will secure extra vigour, if not watched perhaps more luxuriance of wood than the autumn sun would ripen, but a little early pinching will guard against that evil. As soon as the fruit is gathered he may pot afresh in larger pots if the plants are in small pots.

The same remarks apply to "ALEXIS" as respects his *Vines* in 10-inch pots, and from which he wishes to obtain some fruit this season. Let the Vines remain in the pots, but do as recommended for the other trees—give room for the roots to get out, and give plenty of rich compost and manure waterings. If free growth is desired plant out in the usual way, but if this is done do not expect much fruit this season, especially if the ball is broken and the roots traced out. Under such circumstances, free growth is opposed to fruitfulness. As already stated, all

plants in pots fruit best when the roots push against the sides of the pot. We can recollect of a great authority throwing more than cold water over the care and attention that gardeners bestowed on Strawberries in pots for early forcing, because plants lifted and potted in spring ripened good crops in May and the beginning of June. If the great authority had tried a similar method to bring in fruit in March he would have found that the old gardeners had reason as well as success on their side. We have for many years lifted Strawberry plants in March and April, but even these did all the better when they had a little bottom heat, whilst the tops were fully exposed, so as to give a prior stimulus to the roots.

ORNAMENTAL DEPARTMENT.

Simple propagating cases, as hand-lights, &c., are dear. Well, we cannot say a word against, quite the reverse, all the contrivances of earthenware furnished with a sliding square of glass, &c. Some of our readers, in addition to what we said the other week, want something simple that they could get without the ruinous expense of carriage and breakage. We have a few wooden boxes with a square of glass over each, which we find so useful that we should like to have more of them. They are 20 inches square, made of three-quarter-inch deal. The front is 4½ inches high, the back 9 inches, and the two sides slope like a common frame. A square of glass is fitted into a light frame to rest on the back, front, and sides of the box; the front, on which the square of glass rests, with a tack in front, being half an inch thick, and the sides and back 1 inch square and grooved to receive the glass. The glass and its frame are moveable, so that when the glass is damp the dry side can be placed downwards. These when set on a bed or close platform are very useful for striking cuttings, raising seeds, &c., and in some positions the slope from back to front renders them easier managed, and gives more command of light when that is wanted to harden-off the little plants. For all mere sowing and propagating purposes, a square box of one depth, say from 8 to 9 inches all round, would answer just as well, and four such boards nailed neatly together to enclose, say, 20 inches square, need not cost much. Then with common care the covering of glass would require no frame. With a weight of from 21 to 26 ozs. to the foot, a square of 21 to 22 inches could easily be lifted off and on, or even two squares or panes could be used instead of one. Of course, we are supposing these little boxes are under glass, for if in the open air means would have to be taken to prevent the glass being blown off. The boxes may be much smaller if deemed expedient.—R. F.

TRADE CATALOGUES RECEIVED.

Downie, Laird, & Laing, Stanstead Park, Forest Hill, London, S.E., and 17, South Frederick Street, Edinburgh.—*Descriptive Catalogue of Florists' Flowers.*

John Morse, Dursley, Gloucestershire.—*Catalogue of Cuttings.*
T. S. Ware, Hale Farm Nurseries, Tottenham, London, N.—*List of Succulent Plants.*—*Catalogue of Antirrhinums, Auriculas, and other Florists' Flowers, &c.*

TO CORRESPONDENTS.

. We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

Books (*Notice*).—The "Garden Manna." You can have it free by post if you enclose twenty postage stamps with your address.

No. 464 of THE JOURNAL OF HORTICULTURE is required by Mr. J. Albert Ford, 73, Lawton Street, Congleton.

ABUSIVE COMMUNICATIONS (*Editor*).—We should not be justified in publishing your letter. If you had declined paying until you had received the goods, you would have been only justifiably careful.

Half the world's mischief
And folly and woe,
Comes from using a "Yes"
Instead of a "No."

MR. W. ALLESBROOKE.—We do not know his address, but if those who have inquired for it will enclose a stamped letter to him under cover to Mr. D. Thomson, Drumlanrig Castle, Thornhill, N.B., it would probably reach him.

VARIETIES OF THE PEA (*A. W.*).—We are obliged by your pointing out that *The Garden* has been publishing a list as if the descriptions were original. They were not taken from our columns as you suppose, but from Dr. Hogg's "Gardeners' Almanack and Year Book." You will not see a continuation of the descriptions in our contemporary, for Dr. Hogg has just stopped their publication by obtaining from the Court of Chancery a perpetual injunction against the editor for the piracy. Other parties are considering whether they should not apply to the Court for a similar protection to their literary property.

GRAVEL (*W. M. M.*).—We do not know to whom you could apply. An advertisement stating fully what you require would probably obtain you the best offer.

PRIMULA DENTICULATA AND EROSA FORTUNEI (*W. H.*).—The two are very much alike. In the latter the leaves are fully developed when the inflorescence appears and the scape is mealy; in the former the leaves are not fully developed, and the scape is not mealy.

VINE BUDS AND MELON PLANTS INSECT-EATEN (*H. S.*).—The Othiorhynchus probably injures the Vines, and its grubs the Melon plants. It may be *O. picipes*. Whatever the species is, the grub is more or less like that found in ants.

POPLAR AND SOUTHERNWOOD (*York*).—The common White Poplar, *Populus alba*, produces seed in England. Southernwood, *Artemisia Abrotanum*, has spikes of yellow flowers, but they rarely open in England, and we never heard of its ripening seed here. It is a native of Italy.

ORANGE AND BLACK ROSE FUNGI (*A. B.*).—We sent your query to a well-known Rose-grower, and, being in a poetical humour he replied as follows:—

"Liquid manure, ammoniac and spot,
Applied, and freely, at the root;
If that should fail, a little iron
In form of sulphate you may try on."

MANDRAKE (*C. L.*).—The species called Mandrake by modern botanists belong to the genus *Mandragora*. This genus is included in the same natural order as the *Solanum*.

POTATO TRIALS AT CHISWICK (*Derbyshire*).—Send your specimens immediately; they will be planted this week.

SEEDLING AMARYLLIS (*M. A. H. B. L.*).—We cannot admire the flower, there are very many far more beautiful.

PEA HURDLES (*Langthorpe*).—We bought the rough deal, and had them made by one of our own men.

WALKS—CONCRETE AND ASPHALT (*A Beginner*).—For concrete, a layer of stones, brickbats, shells, or chinkers, 6 inches deep, to form a dry bottom; a layer of chalk or lime, in the proportion of one to ten of the stones or other foundation, and well rolled and watered to the thickness of 3 inches, with a rise of 2 inches in the centre; over this half an inch of gravel and lime, or fine chalk; water and roll well again; add one-eighth of an inch of the best coloured gravel; and again roll until quite solid. Have the walk 2 inches wider on each side than you desire, as this checks the turf and weeds from encroaching, and prevents the rain water getting to the foundation of the walk. For asphalt, take two parts of very dry lime rubbish, and one part coal ashes, also very dry, and both sifted fine. In a dry place, on a dry day, mix them, and leave a hole in the middle of the heap, as bricklayers do when making mortar. Into this pour boiling hot coal tar; mix, and when as stiff as mortar put it 3 inches thick where the walk is to be. The ground should be dry and heated smooth. Sprinkle over it fine gravel; when cold pass a light roller over it, and in a few days the walk will be solid and waterproof.

PEAS FOR USE AT THE END OF AUGUST (*H. I. Z.*).—Laxton's Superlative and Omega Peas, to be in at the time you name, should be sown the second week in May. The season makes a difference of from ten days to a fortnight in the growth of Peas; if wet and cold they come in later, if hot and dry earlier. During summer, late Peas take fifteen or sixteen weeks from the time of sowing to attain a full bearing state.

THINNING LEAVES OF POT VINES (*C. G.*).—The leaves on the shoots that are not bearing fruit should not be removed. They should have the same treatment, and are as necessary for perfecting the Grapes as the roots are for their support. Retain them, but keep the laterals well stopped. The dried Grass you sent us is *Agrostis nebulosa*, a very elegant and useful Grass for bouquets and drying.

GINGER FLOWERING—SEEDLING CAMELLIAS FLOWERING (*A Young Beginner*).—We presume the plant of Ginger has been already potted; if not, pot it at once, shaking the plant out, and divide the roots, placing a good division in a 6-inch pot in a compost of two parts sandy fibrous rich loam, and one part sandy peat, adding half a part of leaf soil. Place the pots in a hotbed of 75°, just keeping moist, and gradually increase the supply of water as the plants grow: when the frame is too low for them, gradually withdraw them and remove them to a light position in a stove. Shift into 11-inch pots when the shoots are a foot high. The plant will flower, if strong, in July or August, and at the end of August or early in September the roots will be fit to take up and preserve. Seedling Camellias will flower in the fourth to sixth year. We have now several that have flowered. To have them in flower soon they should be grafted on stocks raised from seeds or cuttings, but to flower them on their own roots patience must be exercised.

ROSES FOR TOWNS (*Amateur*).—The Roses you name are good growers, and would succeed in a town garden if not more than usually smoky. Town Roses require an abundance of watering overhead, and very liberal treatment. Twelve for pots in greenhouse are *Devoniensis*, *Gloire de Dijon*, *Maréchal Niel*, *Sombreuil*, *Marie Sisley*, *Pauline Labonté*, *Safrano*, *Madame Ducher*, *Homère*, *Madame Céline Noiret*, *Adam*, and *Alba roses*, all Tea-scented.

CAMELLIAS FOR VERNY WALLS (*Idem*).—*Mathotiana*, *Leopold I.*, *Valte-varedo*, *Reticulata flore-pleno*, *Monarch*, *Mathotiana alba*, *Giovanni Santarelli*, *Mrs. Cope*, *Rubens*, and *Countess of Derby*. They should be planted out, succeeding admirably in the same compost as Vines, though we think the compost is improved for them by having a quarter of sandy peat added.

IMPROVING LAWN (*P. P.*).—The worstcases are an evidence that your lawn soil is rich and full of humus. You say it is well drained. Are the drains of such a depth as to drain the subsoil? Some drains are only a few inches deep; they drain the surface, but are of very little or no use to the land. The drains should not be less than 3 feet deep, and are better 4 feet. If certain that the land is properly drained we should dress the lawn at once with some good loam, adding one part to four of fresh lime, and after having been thoroughly mixed whilst dry, place it on the lawn at the rate of 20 tons per acre. After the first rains rake well with an iron rake, removing the roughness of the compost, and sow over it about the middle of April, when there is an early prospect of rain, 6 lbs. of *Festuca drusculica*, 10 lbs. *Cynosurus cristatus*, 4 lbs. *Poa nemoralis sempervirens*, 4 lbs. *Festuca tenuifolia*; we should add 6 lbs. *Trifolium repens*, and 4 lbs. *Trifolium minus*, and if the soil be light 2 lbs. *Lotus corniculatus* in mixture for one acre. Rake lightly after sowing, and roll well. You object to Clovers. We have not seen a good lawn without them. If you omit them add one-half more of *Festuca tenuifolia* and *Poa nemoralis sempervirens*.

TAKING VINES INTO GREENHOUSE (*Idem*).—The Vines should be taken into the greenhouse at once. About the middle of March is a good time, tying them horizontally along the front inside until they have broken, and then tie to the wires.

CULVERKEYS.—In Halliwell's interesting "Dictionary of Archaic and Provincial Words," vol. 1, page 286, is the following:—"Culverkeys, the bunches of pods which contain the seeds of the Ash. Also explained the Columbine."—W. I. S. HORTON.

[The flower referred to by Denny could not have been the keys, or seed-vessels, of the Ash. We know that the Columbine has been guessed to be the flower, but we wish to know if anywhere in the British Islands any flower is still known as the Culverkey.]

LAYERING ROSE TREES (C. A. R.).—We do not advocate layering or pegging down the shoots of Roses. They certainly look well when so arranged as to present a flat surface, but the shoots that come from the base, and which must be kept to replace those that are pegged down and blooming this year, present even a more uneven surface than plants trained on the dwarf bush system. Good hard wood pegs are best; they should be 15 to 18 inches long, with a notch at the side about 2 inches from the top. The stakes or pegs should be driven into the ground to within 5 inches of their tops, and should be in rows about a foot apart every way. The shoots of the Roses should be tied to the stakes with tarred string, disposing them equally, and so as to have at least one shoot to cross and be fastened to each peg; cut off the weak shoots, retaining only the strongest and best ripened, but take off the unripe points of these. The shoots pegged down will need to be cut off in autumn after flowering, and be replaced by those of the current year.

TUBEROSE TREATMENT (Idem).—Pot them now in light fibrous loam two parts, one part leaf soil, and half a part of well decayed manure, with one-sixth of sharp sand. Drain the pots efficiently; they may be 7 inches in diameter, and in each place one bulb, and so that it may be entirely covered with soil. If the soil is in a sufficiently moist etate no water need be given; but if dry, water moderately, place in a gentle hotbed, and keep there until they have made good roots, or the shoots are 3 inches long, when they may be gradually withdrawn from the hotbed, and removed to a light airy position in the greenhouse. Water freely and syringe often, so as to keep down red spider. If you wish the plants to flower early they should, after removal from the hotbed, be placed in ainery or other house having fire heat, and they will flower a month or six weeks before those placed in the greenhouse. The offsets should be removed, so as to throw the vigour of the plant into the flower-stem.

MOWING MACHINES (Streatham).—We have no experience with either of the machines you name; but we can say that each machine that has been invented does its work well if carefully managed.

ARRANGEMENT OF FRUIT-ROOM (F. H. L.).—Of the two sites we prefer the lean-to against the north wall. The thicker the walls the more equable will be the temperature of the house. We would have them 14 inches thick, but they need not be hollow walls; a thatched roof is also preferable to one composed of tiles. The floor would be better boarded, but it is not very material. The best arrangement for the shelves is a staging of laths, similar to that used to stage plants upon in greenhouses. One tier of staging may be placed above another, about 1 foot 9 inches apart, and the staging may be 3 feet wide. If yours is a narrow house there will only be room for staging round the sides; but should the house be wide enough, another tier of shelves may be placed in the middle of the house. There ought also to be one or two windows, which should be provided with shutters. The windows should also be made to open. There should likewise be a fireplace or a small stove in the room.

MALFORMATION OF VINE SHOOT (W. T.).—The enclosed shoot is similar to many we have seen this year. The cause is, no doubt, to be found in the unfavourable season of last year, the wood not being sufficiently ripened. In our earliest vinery we had one rod which had nearly all the side shoots affected in a similar manner to the shoot you sent. We trained them in the usual way, but took the precaution to train a young rod up from the base of the old one in case the affection should be permanent. One rod only was affected in the house, all the others broke well and regularly.

DRAINAGE OF A FARMYARD FOR VINE BORDERS (A Subscriber).—This is sometimes very strong, at other times so weak that it might be applied as it is taken from the tank. If it look strong we would advise you to add two waterpot-ful of clear water to one of liquid manure. Apply it to the roots of the Vines as soon as the Grapes are set, and up to the time that they begin to colour.

PEACH TREES IN POTS (T. G.).—The sorts we have found not to set their fruit freely in pots are few. Barrington, Exquisite, and Late Admirable are the worst in this respect. Walburton Admirable is also shy in setting. Salway sets its fruit freely, but it is not a desirable sort to grow in pots. Early Beatrice Peach has large flowers.

HOUSE FOR ORCHIDS (A. D.).—It would never do to depend on a temperature of 30° as the coldest in winter. Where would you be when the thermometer was at 15°, or even sinking to zero? As you propose heating by gas, 2 and 3-inch pipes would be better than 4-inch; but even with 2-inch pipes you would need at least a third more than you specify. As you have the boiler inside, there must be an escape-pipe for the gas. Were it not for showing a funnel through the roof, or getting the draught into a chimney, a small brick stove would be the most economical in every way.

FORCING PIT (W. S.).—We think that two 4-inch pipes worked separately will afford you a good bottom heat. If you want a very strong heat you had better have three, but we should be satisfied with two. For top heat you must have three pipes at least; two would not give you enough of heat in severe weather without making the pipes too hot, and that is always attended by a waste of fuel.

PLANTING FLOWER-REDS (W. G.).—We think the proposed planting this year will, on the whole, be an improvement on the planting of last year. The Hollyhocks, if not over-tall, will look very well at the back of the pannelled border, and the Coleus or the Iresine Lindenii will make good substitutes for Purple King, and will look well in all kinds of weather.

TURF FOR FUEL (O. P., a Subscriber).—We should be obliged if you would try a ton of turf mixed with the coke, and report progress. We presume that by turf you mean firing peat or bog earth. We do not think that you will gain any advantage, as we do not think its heating power, weight for weight, equal to half that of good coke, but we cannot speak for any extensive practice. Try, and give us the results. Slack, breeze, and cinders of coke are different, and all come in useful if mixed with coke. At one time we tried lump of chalk, and they greatly tended to lessen the coal bill. Our limited practice leads us to think that you will gain little or nothing by using turf, by which, we presume, you mean peat. You would see in last week some notices as to orchard houses, and in previous numbers, in "Doings of the Last Week," allusions are made to the importance of not hurrying on trees

even when heat is applied in the dull weather; also to the importance of thinning the blooms and assisting their setting. It is just possible your house has been kept too warm at first, but we fear that the dropping of the flowers was chiefly owing to one of two causes—immaturity of the wood last autumn, or too much dryness or too much moisture at the roots as the trees came into bloom.

WHITEWASHING A GREENHOUSE GLAZED ROOF (H. H.).—For a temporary shade which rains will wash off we use whitening bruised, say 4 ozs. in three gallons of water, and spatter it over the glass with a syringe. For a permanent shade, after using size, &c., we find nothing simpler than skim milk and whitening, say 4 ozs. of whitening in two gallons of milk, and that drawn over with a brush will cover a great amount of glass. When mere shade is the object, the thinner the mixture is put on the better, as, if that is not enough, you can add to it. When neatness is an object it is well to use two brushes—one to lay the material on, and a dry brush to daub it so as to resemble ground glass. In doing such work two things are essential: first, the glass must be dry; and second, if possible, there must be sun to set it nicely. We have thus whitened glass in May, and the shading remained until washed off in October. We recommend Dr. Masters's edition of Hensley's "Elementary Course of Botany."

SECURING BULBS FROM RATS (A Constant Reader).—We have found red lead a safeguard to all kinds of seeds. We shall use it when we plant Crocuses extensively, as even those in pots we cannot keep. We would mix the red lead powder in soft-soap water, and dip the bulbs and corns in it, so as to have a red appearance, or even use it as we do with Peas—that is, we use enough of moisture to damp the Peas, and no more, and then dust as much of the red lead powder among them as, when turned with a stick, leaves every seed reddish. We have not tried it with corns and bulbs, but we wish we had, and we would recommend you to try it. In our case mice, rats, and birds will not look at the seeds.

WATERING WITH SPRING WATER (A Constant Reader).—Spring water, though not so good as rain water, is nevertheless suitable for watering plants. It would be better if you had a cistern in each house of sufficient capacity for one watering. We use spring water to a large extent, and do not find any noticeable difference between it and rain water. For syringing rain water is much to be preferred, as it does not mark the foliage.

SNOWDROPS FAILING (Idem).—We are unable to account for the bulbs of these disappearing after the first season. Do not place the crown of the bulb more than an inch below the surface, and plant in autumn when they are beginning to grow. Probably the leaves were cut off before they were ripe, and to that we should attribute the failure. They should succeed under the same treatment as Crocuses.

COMPOST FOR FERNS (A Young Gardener).—Two parts sandy fibrous peat, one part turfy yellow loam, and one-sixth part each of silver sand and of charcoal in lumps from the size of a pea to that of a hazel nut, the whole well mixed. Of the materials you name charcoal is the most useful if you use sand as an ingredient in the compost, but if not we should prefer the sandstone. Lycopods do not require different treatment from Ferns, only they need more moisture and shade.

VARIOUS (A. D.).—We would now cut down the plants to within 6 inches of the soil, taking off their tops when they had grown 1 foot high. Climbing Roses may be trained with the shoots upright on the same principle as Peas. We have several so trained, and the method answers well. We would not have any plants in the Rose border besides the Roses. They do better without them. Violets now blooming in the conservatory will do for another year, but they must be divided in April or May, and planted out in good rich soil a foot apart every way, and be taken up and potted in autumn. Young plants are far superior to old ones kept in pots for a second season's bloom.

GLEICHENIA SPELUNCÆ CULTURE (W. P.).—Pot it in two-thirds fibrous peat and one-third turfy yellow loam, with a free admixture of silver sand and lumps of charcoal as large as hazel nuts or walnuts, mixing the whole well together. Drain the pot to one-third its depth with crocks, the largest at the bottom, the smallest at top, and cover with a thin layer of sphagnum or the rougher parts of the compost. Pot so that the rhizomes may be about half an inch below the rim of the pot, and level over neatly, making the surface fine and firm, the rhizomes only just covered with soil. Water with a rose-water-pot until the surface becomes settled, which it will be in two or three waterings, always keep moist, and when growing afford abundant supplies of water. Place the plant in a greenhouse and shade it from bright sun, admitting air moderately.

SOWING DEUTZIA GRACILIS AND LOBELIA BELLIDIFOLIA (Petite).—The seed of *Deutzia gracilis* may be sown in light sandy loam in a pot or pan, and be covered with a depth of soil equal to the diameter of the seed. Place the pot in a cold frame, or plunge it in a warm situation out of doors, and keep the soil moist. The seedlings, when an inch high, may be pricked out 3 inches apart in light loamy soil, and should be shaded from sun until established. The *Lobelia*, as you have no greenhouse and we presume no hotbed, may be sown in a pot filled with light turfy loam, adding a third of peat, and a sixth of silver sand. Make the surface very fine, and just cover the seed with very fine soil. Place the pot in a room window, and keep the soil regularly moist. When the plants can be handled pot them off singly in small pots, and encourage their growth, keeping them well supplied with water. In June they may be planted out in rich soil. After the first frost take them up and pot them, wintering them in a room window safe from frost, and keep the soil no more than moist. The following May plant them out of doors, and they will no doubt flower well.

AZALEA LEAVES BROWNED (J. W. L.).—Syringing Azaleas during the winter is not desirable, and your doing so has no doubt caused the leaves to become brown at the points from water dripping or hanging on them. Discontinue the syringing, and we think your plants will go on well. We do not think water from a galvanised iron tank will have any injurious effect. Woodlice will not shell and eat the seeds of Melons. Mice, we think, are the cause of the mischief. We should set a few spring traps by the side of the Cabbages and so take the woodpigeons, or you can take an old hat or two and suspend them with a string between two stakes thrust into the ground about a yard apart, the hats about 3 or 4 feet from the ground, and so placed that they will be moved by the wind. We find these infallible against stockdoes. They build their nests in trees close by the kitchen garden and do no harm, but before we used the hat-scars they did great mischief.

NAMES OF PLANTS (A. S.).—No one could tell the name from a single flower of the Scilla; you must send a spike of flowers. (*Bath*).—*Narcissus minor*. (*Mac*).—*Cystopteris fragilis* and *Polystichum Lonchitis*. (*J. Carpenter*).—*Oleander neriflorus*. (*W. Ravenhill*).—The flowering plant is *Leucopogon lanceolatus*. The *Selaginellas* are *S. Braunii* and *S. ucinata*. The Fern is

Didymochlena truncatula. (*E. Eades*).—1, *Asplenium flabellifolium*; 2, *A. lineatum*, or a near ally.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY PROFITS.

As a practical man and farmer, will you give me space for a few common-sense remarks upon a lecture delivered by Mr. Edwards on the above subject, and wherein he proved entirely to his own satisfaction that, from an agricultural point of view, "fowls not only pay but actually return a larger profit than that realised from any other farm stock?" There are a certain number of persons who keep a few head of poultry, who undertake the sole management themselves, who feed them almost entirely with the scraps from the house and the refuse from the kitchen garden, and who have the opportunity of allowing them a good grass run, all which they consider cost nothing. They then constitute themselves their own customers, consume their own produce, charging themselves with eggs and poultry at retail shop prices, and they then fancy that "poultry pay," and moreover return large profits, simply because they only consider in their debtor and creditor account the grain they actually buy. But to a farmer, a thoroughly practical man and who understands book-keeping, this is mere moonshine.

And now let me turn to the details of the lecture. The recommendation is to keep only "first-class poultry of the best improved breeds," but in the debtor and creditor account the lecturer commences with a supposed spontaneously produced "chick." The parent birds are not mentioned. Let us suppose a farmer beginning this neglected branch of agriculture, and starting, say, with one hundred of the "best improved breed of first-class poultry." He could not possibly buy them (young birds in full lay), on an average for less than 7s. 6d. per head. These birds he is supposed to sell two years after for 2s. 6d., or at a loss of 5s. per head, or £25 on the one hundred head purchased. This loss does not appear in the balance sheet. Again, it must be remembered that, supposing for the sake of argument, Hamburgs lay the amount of eggs stated, they do not sit; and therefore other hens must be kept as mothers, who would lay comparatively few eggs; and, moreover, cocks lay no eggs and return nothing for their food, whereas in Mr. Edwards's account every fowl, sinner or non-sinner, cock or hen, is considered to lay on an average 220 eggs per year, which is absurd.

Again, any practical poultry-keeper knows that you cannot possibly expect to rear all the chickens hatched, more especially early broods, which are what Mr. Edwards advocates, and yet in this debtor and creditor account every chicken hatched is reared. Again, every egg laid is sold, no provision being made for replenishing worn-out and sold-off stock. Again, Mr. Edwards states, "Hamburgs" are the fowls to be kept, and says that at two years and a half old hens weigh 7½ lbs., and for these he can procure 2s. 6d. each. Hamburg hens never weigh 7½ lbs., and certainly no one would give 2s. 6d. each for old hens. A farmer does not sell to "the consumer," but to "a middle-man," who swallows-up all the profit.—E. E. E.

GAME COCKS OF THE FIGHTING PERIOD VERSUS GAME COCKS OF THE SHOWING PERIOD.

As a breeder of the above birds for upwards of forty years, first for the pit and now for exhibition, I think I may venture to give an opinion respecting the qualities of our Game cocks in the fighting period, and also the showing period. I fully endorse all Mr. Wright has written about the present exhibition birds, and I think the majority of the birds bred by our best exhibitors would prove themselves quite equal to their ancestors in the pit, and for general appearance they are far in advance of them. I cannot imagine in which points "OLD BLACK REP" can see the Malay in our present cup-winners, and I think if he were to cross one of the old fighting cocks with a Malay he would find the offspring would be a long way behind in those points required to make a cup-winner at any of our large shows; in fact, he might cross for several years, and would still find his birds far behind in the race.

I think any close observer would plainly see, on looking at the Malay with his short thick head, bad colour of feathers, and general coarse appearance, the many difficulties he would have to contend with before he could get a Game cock equal to the present type of cup-winners.—DUCKWING.

OXFORD POULTRY AND PIGEON SHOW.—The Committee of this Show lately met to audit the accounts. There was a satisfactory balance. Votes of thanks were passed to the patrons and donors of cups. In order not to interfere with the arrangements of other committees, it was determined thus early to fix the date of the second Show for Wednesday and Thursday, October 29th and 30th. We are informed that the value of the

prizes will be more in some cases, and that prizes in an increased number of classes will be awarded; also that cups will be given in nearly every class. The Pigeons will not be neglected, silver plate having been promised for several varieties. We trust that exhibitors will give their assistance by a numerous entry. The Town Hall in addition to the Corn Exchange has been engaged, so that any number of pens can be accommodated.

REFORM IN POULTRY SHOWS.

I HAVE been for a long time a frequent visitor at poultry and Pigeon shows, in fact I never miss one that I can go to. I always return with a feeling of regret that the committee should not have made some arrangement that would have put me, the mere amateur—I know what the word used to mean—on a level with the regular professional exhibitors, who carry away so large a share of the spoil at most shows. I have pondered over the matter, have read the complaints of many similarly situated to myself, have heard the suggestions thrown out from time to time, and am at length prepared to offer a plan which will at once, without excluding the professional shower, leave him but a sorry chance beside the amateur, and which will at the same time fill the catalogue of most exhibitions. This scheme of mine is to reverse the usual order of things, and award the prizes to the worst birds. It is positively unjust, I say, to go on year after year giving prizes only to the best specimens, while scores of fanciers—local fanciers, men who never borrowed or bought a bird in their lives, men whose yards and lofts are often large ones, and who would not hesitate to let you pick out any bird for a guinea, are as good as told that the prizes were never meant for them. Consider, by the adoption of my plan, how these men will support exhibitions. From every nook and corner of the kingdom, supposing the entry fee to be judiciously low, we should evoke a friendly rivalry of true fanciers—of fanciers who, not having given £20 or £30 for this or that bird, and not breeding birds of that value themselves, have not made their winning a foregone conclusion.

It may be urged in opposition to this plan that it subverts the true end of shows, which are for the encouragement of breeders and for the improvement of the breed; but let us look into it. Considering a show as for the encouragement of breeders, the end is attained most surely by my plan, for there are more breeders of moderate than of good stuff, and being no respecters of persons we must look to the end—the encouragement of the larger number of breeders; and considering it for the improvement of the breed, I must confess I cannot see how giving every cup for two or three years to one bird, which happens to be better than was ever raised before, tends at all to improve the breed. It must do the reverse, for how can every fancier spend years upon years in striving after excellence, and never stint expense in the purchase of stock? The thing is impossible, and the success of one who can do this must be but disheartening to the tyro and the modest fancier, who must perforce content themselves with the more ordinary type of the breed; and that we shall find, after all, to be often the correct type.

I shall look forward to our coming summer and autumn shows with much suspense to see my plan adopted. It has been called for long enough. Solitary fanciers have now and then lifted up their voice against the present plan. Latterly the number of complaints from these gentlemen, who are, as has been well said by no mean authority, "the sinews and backbone" of a show, have been very numerous. A few committees have tried what they could do, have ruled out all prohibitory prices, have limited even actual prices; and that must work well, for how can, say, a £10 pair of Carriers be anything but very poor specimens; and lastly, your contemporary takes up the matter, and with an earnestness worthy of the cause, demands the exclusion of the leviathans who arrogate to themselves all the goodness in the country. I now call on all true amateurs to aid us, and I trust that before many months we shall see "shows as they ought to be, not as they are," so contrived that every man, be his birds what they may, will stand his fair chance of a cup.—SAPIENTISSIMUS.

[We have heard of a donkey race where the last was to be the winner, but there to insure a good contest each owner rode his opponent's donkey. If "SAPIENTISSIMUS's" plan were adopted, each exhibitor should feed an opponent's fowls.—Ens.]

HANLEY POULTRY SHOW.

I THINK it only right to the Committee that I should bear testimony to the gentlemanly way in which they have treated me. Mr. Douglas was not quite correct in stating that "they are doing something very wrong over this Show." If he had said "there is something wrong, &c.," it would have been a little nearer the facts of the case. My case was this:—I was awarded the Duke of Sutherland's cup for the best pen in the Show, and the Committee had the extra prize booked to the wrong class in error. It was simply a mistake on the part of, I suppose, the Secretary or some person deputed to act on his

behalf, in copying the awards out of the Judges' books. When I discovered it I immediately wrote to the Chairman of the Committee, who very courteously wrote back saying that it was an error, but that the Committee would forward me an extra prize. As they met me in so gentlemanly a manner I gave them a guinea as my subscription to their Show, knowing that there would be some loss consequent upon their mistake.

I am very glad to hear that the Show has been a success, and I hope the Hanley poultry fanciers will not allow it to fall off the list of exhibitions. I think, however, as one of your correspondents has stated, that it would be a great improvement if in future they would mention the names of their Judges either in their prize lists or catalogue—not that I find any fault with Messrs. Douglas and Martin, as they are two of the most successful breeders and have a practical knowledge of poultry, but it is more satisfactory to exhibitors to know who have awarded the prizes.—JAMES FLETCHER.

BIRMINGHAM PHILOPERISTERON SOCIETY'S SHOW.

This took place on the 19th and 20th inst. It was certainly a very good Show, and one on which its members may congratulate themselves, but it should by all means have been a fixture of at least a month prior in date. From this cause, the entry did not equal, as to numbers, those shows which have taken place during the past ten years in connection with this Society, but which were held a month or six weeks earlier in the season. So late in the spring most of the best specimens of Pigeons have either young ones, or, at least, are about nesting, and hence two members alone abstained from exhibiting, although they would otherwise have made an entry of forty pens from their own lofts.

As will be seen on reference to the list of awards, the Selling classes were wonderfully good, and abounded with some very cheap pens; the great variety of breeds shown in these classes was also a subject of general remark. The *Carrier* classes, whether those expressly for cocks or hens (these being shown separately), contained birds of a quality rarely exceeded, and a remarkably well-shown Dun hen took the cup. Some few very promising young *Carriers* were entered in these classes. *Pouters* were few, the White being unquestionably the most praiseworthy. In *Fantails* there were some remarkably heavy-tailed birds, but we regretted to see some that carried the tail decidedly inclined to one side, a great objection in a show bird of this variety. In the *Barb* class there was only a single entry, still it was a good one; but, strange to say, there were many nice *Barbs* shown in the Selling classes. The *Almonds* were scarcely so good as those exhibited at some of this Society's former meetings, and, on the contrary, the *Short-faced Beards*, *Balds*, and also the *Owl* Pigeons were very superior.

One of the members, Mr. Royds, of Rochdale, sent a very grand collection of *Jacobins*, all three classes of this breed being of a first-rate character. The *Trumpeters* were a fine class; whilst in both *Dragoons* and *Antwerps* the competition was of that lively character for which the Birmingham Pigeon Shows are known. A class expressly for *Swallows*, although a silver cup was given to them by a fancier of this variety, did not bring out a large entry, still the birds were well shown. The flying *Tumblers* were comprised in well-filled and interesting classes, and embraced a great variety, whether considered as to colour or character; and as both in the immediate district and the surrounding counties these breeds are especial favourites, this division of the Show secured a large share of popularity.

It must be a matter of careful consideration for the Managers of this Show to alter the date to an earlier period in future years, complaints being general that individual Pigeons had been taken from either eggs or young ones for the sole purpose of sending them to the Show.

CARRIERS.—*Black*.—Cocks.—1, C. Siddons, Aston, Birmingham. 2, G. F. Whitehouse, King's Heath, Birmingham. *Hens*.—1, C. Siddons. 2, G. F. Whitehouse.

CARRIERS.—*Dun*.—Cocks.—1, C. Siddons. *Hens*.—Cup, 1, and 2, C. Siddons. **CARRIERS.**—*Any other colour*.—Cocks.—1, C. Siddons. *Hens*.—1, C. Siddons.

POUTERS.—Cocks.—1 and 2, F. Bowker, Birmingham. *Hens*.—1, F. Bowker.

FANTAILS.—1, G. White, Birmingham. 2, J. W. Edge, Tyburn, Edlington, Birmingham.

BARBS.—1, A. Richardson, Birmingham.

ALMONDS.—Cup, 1, 2, and 3, J. F. White.

BALDS.—1 and 2, W. Woodhouse, King's Lynn. c, J. W. Edge.

BEARDS.—1 and 2, W. Woodhouse.

OWLS.—*Foreign*.—1 and 2, G. F. Whitehouse. *English*.—1, J. W. Edge. 2, W. Woodhouse.

TERRITS.—1, J. W. Edge. 2, W. Reddihough, Kelbrook, Colne.

JACOBS.—*Black*.—1, 2, and 3, E. E. M. Royds, Rochdale. *Red*.—1 and 2, R. G. Sanders, Beverley. *Any other colour*.—1, R. G. Sanders. 2, E. E. M. Royds.

TRUMPETERS.—1 and 2, W. Gamon, Chester. 3, J. F. White. c, R. G. Sanders; J. F. White.

DRAGOONS.—*Blue*.—1, W. T. Nicholls, Selly Park, Northfield. 2 and 3, W. Gamon. *hc*, W. Reddihough. *Yellow*.—1, G. F. Whitehouse. *White*.—1 and 2, G. F. Whitehouse. c, W. Reddihough. *Any other colour*.—1, W. Gamon.

ANTWERPS.—*Blue*.—1 and 2, W. Gamon. *Dun*.—Cup and 1, W. Gamon. 2, C. Mugg. *Chequered*.—1, W. Gamon. 2, J. F. White. c, G. White.

SWALLOWS.—Cup and 1, F. Bowker. 2, J. W. Edge.

SADES.—1 and 2, F. Bowker. 3, G. White.

SADLES.—1, J. W. Edge. 2, G. White.

BLACK MOTTLES, ROSEWINGS, AND REDBREASTS.—1, Cup, 2, and 3, F. Bowker. 4, G. White. *hc*, J. W. Edge; G. White.

TUMBLERS.—*Any other variety*.—1, J. W. Edge.

SELLING CLASS.—*Carrier, Pouter, Barb, or Short faced Tumbler*.—1, 2, 3, and 4, H. Yardley, Birmingham (Black Carrier, Red Pouter, Black Barb, and Silver Dun Carrier). *hc*, H. Yardley (3). c, C. Siddons; H. Yardley (3). *Any other variety*.—1, 3, and 4, H. Yardley (Silver Dun Dragon, White Owl, and Yellow Dragon). 2, G. White (White Fantail). *hc*, H. Yardley (7). c, H. Yardley (3); J. W. Edge.

Messrs. Hewitt and Allsop, both of Birmingham, awarded the prizes to the Selling classes and Antwerps; and Messrs. Hewitt and Yardley judged all the other classes of fancy Pigeons; the premiums for flying Pigeons being decided by Mr. Charles Hague and Mr. W. Kendal.

MOTTLED TUMBLERS.

I WAS rather surprised when I read the remarks on the above subject last week from "THE ONE WHO WROTE THE ANSWER," and who owns to Eaton's being the model bird, and yet refers to a work published by Routledge.

For the last twenty years I have spent a deal of time as well as money on Pigeons, and on Tumblers more than any other variety, have been a regular attendant at most of our London societies' shows, and have always looked upon Eaton's portrait as the correct thing as far as the marking of a Mottle is concerned. I never before heard of any fancier preferring Mottles without the white feathers on the back. As to fancy being changeable, it has not been changeable to any whom I know, and I know some who have kept Pigeons for fifty or sixty years. I have also asked the opinion of several of the old Spitalfields fanciers, whom I consider to be as good fanciers as any, and they are all for Eaton's, and ridicule the idea of a Mottle without the handkerchief hack. One of them, a Mr. M. Hall, of whom Eaton himself has bought many a Mottle, says where they would sell for pounds with the handkerchief back they will only sell for shillings without it, and to be perfect they must have it. I have also a letter from Mr. Dean Wolstenholme, who was one of Eaton's oldest friends, also the engraver of his plates, who is a well-known fancier, and who is looked on as an authority by many, in which he says, "When I belonged to the Feather Club forty years ago, unless the bird was marked on the back as well as on the wings it was inadmissible to be put in the pen as a Mottle." I think with such authorities as these, however "THE ONE WHO WROTE THE ANSWER" might prefer the birds, he will acknowledge that, although his own fancy may be changeable, it is not so to the real fancier.—J. FORD.

LIMITING THE VALUE OF EXHIBITED PIGEONS AT DUBLIN.

DID "AN EXCLUDED EXHIBITOR" never hear of any other "gross proceeding" at the Royal Dublin Society's Show than that of limiting the prices in the poultry and Pigeon classes? If he has been an exhibitor at the Royal Dublin Society's Shows he cannot but be aware of the wholesale hiring and borrowing carried on by some fanciers (?) who descend to any unscrupulous meanness to gain a prize. The new rules have put a stop to such dishonest work, and they make the limitation clause the ostensible objection, while the real one is the rule against hiring. As to saying that the organisers of the schedule are "half dealers, half amateurs," it is what I will mildly term untrue. I can state that the schedule of prizes passed the Committee of the Royal Dublin Society after due consideration, and that they highly approved of the rules as securities against all dirty work.

The reason for inserting the limitation clauses was not "preventing the English exhibitors from carrying off the prizes," but to keep certain Irish fanciers from carrying on their "little games" of borrowing and hiring, and also to keep dealers from monopolising the prizes. The reason why no limitation clause is put on "cattle, sheep, pigs, or horses" is that there are no exhibitors in those classes who habitually borrow and hire for the mere purpose of prize-taking, and they have an honest pride in showing stock of their own breeding. Unfortunately, amongst poultry and Pigeon-fanciers there are always a few addicted to dishonest courses, and it was to keep them on the square that the classes were limited. Hitherto exhibitors were allowed to do pretty much as they pleased, but they are now kept within something like reasonable bounds, and, therefore, this little ebullition of irritation is nothing to be surprised at.

When the Show comes off it will, I think, be found to be inferior to none ever held by the Royal Dublin Society either in quality or quantity; it will also be found that very few of the constant exhibitors will be absent, and that many new ones will be added to the list.—A DESPISED SKINNIN, *Dublin*.

THE letter of "AN EXCLUDED EXHIBITOR, *Cork*," might produce an erroneous and unfavourable impression on the minds of English amateur poultry and Pigeon-fanciers if passed unnoticed. It was not, as the writer states he has been informed, or the purpose of preventing English exhibitors from carrying

off the prizes that the rules limiting the price were made; on the contrary, their competition tending, as it does, to the better success of the shows, is earnestly and cordially desired; but the rules are intended to exclude borrowers and dealers; for many, like myself, have no desire to encourage either class with their attendant practices.

The framers of the rules were anxious, at all events, to encourage and cultivate amateur competition; but how was this to be done so long as it was competent for borrowers to have recourse to the birds of their dealing friends, together with the imposition (to prevent such birds leaving their possession) of impossible prices? I think the rules have met this difficulty. I have reason to hope the only "bull (?) in the affair will be that mentioned by your correspondent, and that it will be wholly confined to the pasturages of his letter. I cannot see the analogy between it and our interesting feathered friends, but I can quite understand why it is very improbable horned cattle will be exhibited by any but their owners; therefore there exists no reason for the introduction of protective clauses or grounds for his comparison.

I feel called upon to bear testimony to the commendable promptness with which the Council evinced their readiness to grapple with and end a grievance by diminishing mere mercenary interests in the poultry branch of their Show.—E. A. SEALE, *Cottage Park, Kilgobbin, Co. Dublin.*

NADIRING.

I HAVE only to hint to so able an apiarian as "B. & W.," that a nadir is merely an extension of breeding space, and that it is against all sound storifying rules to nadir first and super afterwards. Bees must be compelled to press up into the super, and when once work is fairly in progress there, then nadir, both to prevent swarming and augment the population to complete that and succeeding supers. All supers ought to be so shallow as to prevent their ever being employed as nadirs, or converted into breeding receptacles, also for the due and proper classification of the different descriptions of virgin honey. There is no difficulty, only a little tact necessary, in getting bees to take to shallow supers; the nicety is to hit the proper time. The novice, possibly, on a given date, without taking into account the state of the atmosphere and honey prospects, opens communication with a super, and the bees, scorning so questionable a procedure, have their revenge by swarming at the first favourable chance. The stock boxes must be full of bees as well as combs; the temperature must be genial, and honey to be had; and the guide-combed super, above everything, kept as warm as possible. What an eyesore to Messrs. Neighbour's neat catalogue and handy bee book the "Apiary," those illustrated perpetuations of Nutt's fallacious ventilating theory! Is it not the first act of the bees to close the perforations in the zinc tubes? Where was it we read the bee-keeper counselled to draw them up and clear them, then re-insert them? How long the thwarting process was to be continued we do not remember. We who follow in the wake of the good old ship "Experience," sail on the very opposite tact. No sooner is the super placed than we exclude the colder atmosphere by running a strip of gummed paper round the junction with the stock hive, cover up with a fleece of wool or four plies of woollen cloth; and when the slides are drawn how grateful is the hum of the ascending throng as they duly appreciate our anticipation of their wants and wishes! The heat so generated, it is evident, must promote wax-secretion and comb-building, and we storifiers know full well the quicker the work is done the purer and finer the honey is.—A RENFREWSHIRE BEE-KEEPER.

ENGLISH BEE BOOKS.

A CORRESPONDENT, "A WELSH KEEPER," asks us for a list of "the authors who have written on our favourites previously to the present century." We can only name those with which we are in some way acquainted, and from these we must except the first in the list, for we have never seen either the volume or quotations from it. We cannot even tell where we saw it mentioned:—"Edmund Southern on Bees," 1593. "Levett on Bees (Dialogues)," 1634. "Remnant on Bees," 1637. Butler, who published in 1634, entitled his bee book "The Feminine Monarchie," but in Cromwell's time a volume appeared entitled "Reformed Commonwealth of Bees. Presented to Harthih, 1655." "New Discovery of an Excellent Method of Bees. John Gedde." 1675. J. W. (Worlidge) "Apiarium." 1676. "English Apiarian." John Gedde. 1721. In this, octagon hives of three storeys are mentioned. "Apes: a Poem by Jacobus Vanerius." 1729. "Modern Art of Breeding Bees. By J. Dimsdale, M.A." 1740. "Collateral Bee Boxes. By Stephen White, M.A., Rector of Holton, Suffolk." 1756. "An Enquiry into the Nature, Order, and Government of Bees, those instructive and useful insects; with a New, Easy, and Effectual Method to Preserve them not only in Colonies but Common Hives—a Secret unknown to past ages, and now published for the Benefit of Mankind. Written upon Observation and Experience. By the Rev. John Thorley,

of Oxon. Third Edition. 1772." Plate of hive as frontispiece, on top of which is engraved, "Thorley's Original Honey Warehouse removed to No. 85, Lombard Street, near the Mansion House;" and at the bottom, "Just published, the 2^d Edition of The Management of Bees. By N. Thorley." The preface is dated Chipping Norton, Nov. 21, /43. The editor in the preface speaks of the author as his father, and states that improvement is a glass on the top of the super. He quotes Dimsdale on Bees—a poem. Thorley says, "I once had a stock of bees which not only bred great number all the spring time, but also swarmed without drones." N. Thorley had an apiary near Ball's Pond, Newington. We have omitted the works of Purchas and Worder.

TO BEGINNERS IN BEE-KEEPING.

[THE following extract from the American "Bee-keepers' Magazine" will interest some of your apiarian readers. Some of the hints are worthy of particular notice by all novices; and others are suggestive even to the more experienced.]

Work quietly, and avoid sudden starts. Never fight your bees, and always keep cool.

If you get stung, remove the sting, squeeze out all the poison you can, and apply hartshorn.

Use plenty of smoke. A roll of dry rags or decayed wood makes the best. Blow it in the entrance and at the top of the frames.

If you are timid use rubber gloves on the hands and a veil over the face and head. The veil must be long enough to allow the vest or coat to be put on over it.

When pasture first becomes plenty in the spring is a good time to transfer bees. Always work among the hives during the middle of the day, when the bees are busy.

Stocks without eggs or young-born in June must be queenless, and should be supplied with a queen or queen cell, or they will dwindle away and perish either by robbers or moth.

When symptoms of robbing occur use the utmost caution. Contract the entrance of weak hives, and allow the comb, honey, sugar, or syrup to be around. Avoid opening hives as much as possible.

Avoid an excess of drone comb by the presence of a queen in swarms where combs are to be constructed. As swarms having young queens seldom swarm that year, less drone comb is built in swarms having young queens.

Quiet is essentially necessary to the well-being of an apiary. Do not place it near mills, steam works, or manufactories of any kind. If possible have it in view from the window of the family room, as much extra trouble may be avoided.

As natural talent or business tact is requisite with education to success in business, so a careful turn of mind and a love for the business, with an understanding of the subject, are necessary to success in bee-keeping.

Put on honey boxes partly filled with comb as soon as the lower part of the hive is well filled with honey and bees, and when they are gathering honey plentifully; commence with only one or two boxes at a time on the most populous stock.

In transferring combs, always give those the preference that contain worker blood. Put brood combs near the centre of the hive in the order in which they were in the box hive. Do your transferring where robbers cannot possibly be attracted.

Avoid weak swarms, as they gather but little honey, breed slowly, and are in great danger of destruction by robbers, the moth, or severity of winter. Weak swarms should always be united in the fall, and should never be made by dividing early in the season.

Whenever you notice the bees running about the entrance in the evening, in a disturbed condition, mark that hive and notice it the next evening. If the bees run about smelling each other, it is a sign that they have lost their queen, and should receive attention.

In establishing an apiary, select a gentle slope to the south-east; face the hive in the same direction. If possible have running water near. Shade and protection from winds are important. Set every hive as perpendicular as a clock; for a stand, take two short pieces of 4-by-6-inch scantling, and lay or nail on a board.

To make queen cages: Cut wire cloth 3 by 4 inches; pull out two or three transverse wires from one of the 3-inch edges, and insert the protecting ends thus left in the corresponding meshes of the other 3-inch edge, and fasten them; stop one end with cork or wood. When you wish to introduce a queen, put her in the cage and stop up the other end with wax.—(American Bee-keepers' Magazine.)

OUR LETTER BOX.

BRAHMAS—RABBITS (P. C. S.).—All Brahmas have feathered legs. The Ostend Rabbit we believe is also known as the Polish, Himalayan, and by other names. The Patagonian has russet-coloured fur. You will find all particulars in our "Rabbit Book," a new edition of which is now printing.

ARTIFICIAL HATCHING (T. W. B.).—We know of no machine that would

answer for so small a number, nor do we know any reason why you should have any trouble with sitting hens. There are plenty about now, and if you put them in a basket or the half of a butter-tub covered at the top you will have no trouble with them. It is more than probable you have put down hens that were only beginning to be broody. Such are not to be depended upon. Every hen should be put upon dumb or sham eggs for two or three days before she is entrusted with those she is to hatch.

REARING POULTRY (*A Constant Reader*).—About 105° is the temperature for hatching eggs; but of course it varies, and falls to 90°, or even lower, when the hen is off her nest. No incubator has proved satisfactory. If you wish for a cheap book buy our "Poultry Book;" if you wish for the best illustrated and most copious, take in Mr. Wright's "Illustrated Book of Poultry," published in shilling numbers. A good book about swine is Richardson's "Domestic Pigs."

COCK HEN-PECKED (*J. J. R.*).—The hens will not give up the habit while they are in confinement. You must remove the naked birds, and rub the bare spots with compound sulphur ointment.

COCHIN WITH TWISTED FLIGHT (*F. G. W.*).—The cock is disqualified; he has a twisted flight. The fault is also hereditary. It is rare for Cochins to have swelled face, as such are not subject to roup. Wash the face with cold water and vinegar, and give Baly's pills.

CHICKEN FAILURE (*Cheshire Amateur Farmer*).—The foundation of the failure was putting the chickens in the harness-room, and then putting them on a brick floor. The sulphate of iron and the tonic mixture have caused the increase in their malady, and they will doubtless all die. We can only say to you and many other querists, Follow nature as closely as you can, you will succeed with little trouble. Eschew theories and artificial treatments. We have not lost a chicken.

COCK AILING (*Mabel*).—Give the bird a strong dose of castor oil, a good table-spoonful; follow it with bread steeped in beer, and pills of camphor two per day, each as large as a full-sized garden pea.

INDICATIONS OF A FERTILE EGG (*Constant Reader*).—You have no means of ascertaining whether or not an egg is fertile till after four days' incubation, when the first development takes place, and is perceptible if the egg be put in a strong current of light. The temperature must be considered in fixing any time that may elapse without injury if a hen leave her eggs. At this time of year, if they are left in the early morning for two hours they are placed in jeopardy. In the summer, if very hot weather, they may be left six hours; and there are instances known of eggs having hatched after they had been twelve hours deserted. It is, however, always a source of weakness to the chicken if the eggs have been partially chilled. You may at present run ten hens, and later in the season fifteen or sixteen. (*Subscriber*).—You can test eggs easily. Shut yourself into a dark outhouse when the sun is shining brightly; admit the light through a chink or small opening; form a sort of tube by partially closing your hand; put the egg at one end, and bring it in contact with the ray of light; look through the other end, and you will see the first alteration in the shape of a dark streak.

CHICKENS LEG-WEAK AND DYING—FEEDING (*Negro Novio*).—All the ailments we hear of, unknown disorders, and leg-weakness we attribute to un-natural food and to unnatural treatment. Our fowls never have leg-weakness, nor epidemics. Our chickens are all out of doors, and are fed as we describe in this Journal. They have curd, bread and milk, boiled eggs, bread crumbs and sometimes suet; when the weather is very cold they have beer to drink. They always roost on the ground, and always have done so. Any other flooring will cause cramp. If you follow this, which is natural treatment, you will have no difficulty. Quackery both in breeds and treatment will give nothing but trouble.

FOWLS' LIVERS DISEASED (*Subscriber*).—Constant changes of temperature are always productive of more or less derangement of the liver, but that is a softening and partial decomposition. The description you give is that of a rabbit's diseased liver. All the animals we have to do with suffer from liver complaints. Some have knotty hard callosities that form white substances in the liver; others suffer from enlargement and as much decomposition as we believe compatible with life. In wild birds, as in Grouse, the disease is fatal. In poultry we treat it successfully with a dose of castor oil; then camphor pills for two or three days, pill morning and evening the size of a garden pea; and if the convalescence is slow, decoction of wormwood to drink.

INSECTS ON CANARIES (*A Subscriber, E. M.*).—I wish our entomological correspondent who writes the interesting articles on the predatory and useful insects of our gardens, would cultivate the acquaintance of the Canary parasite, and tell us who and what the fellow is, where he comes from, whether he goes; in fact, write his biography from his cradle to his grave. I think a few specimens could easily be sent for inspection, but the better plan would be to set our friend up with a pair of birds and allow him to breed his own vermin, and at the same time amuse himself with a nest or two of young birds. For all practical purposes I may say in reply to "E. M." that their origin is dirt, their existence dirt, their end a thing much to be desired, but not easy to accomplish. Their prevention is more easy than their eradication. Just now, when most breeders are putting-up their birds, I may say to all, Give your cages a thorough cleansing. If you have only one or two small ones, and they are infested with insects, scald them—put them in the kitchen copper. If you have large stacks of cages put them down and have them out into the yard and turn on the tap. Give them pail after pail of water, and afterwards thoroughly whitewash the interior with whitening mixed with thin flour-and-water paste to the consistency of thick cream. Fill-up every crack, and especially the small ones. The larger cracks, such as the spaces which sometimes occur from the wood warping, are not of so much consequence. They are not such comfortable tenements as the minute interstices into which you can hardly insert the blade of a table-knife. Use a medium-sized paint-brush, and work the stuff well in, and finish-off smoothly. Clean your perches, see that all old wire holes at the back or elsewhere are filled-up, examine seed-hoppers, and scald them if need be, tear down all corucies and ornamental carving, and leave no hole or corner uncleaned. Keep a sharp look-out for stragglers during the season, and with ordinary care and strict attention to cleanliness you need not be troubled.—W. A. BLAKESTON.

AVIARY BIRDS LOSING FEATHERS (*Sunlight*).—Vary the diet of your birds still more, and probably you will find the feathers soon grow freely. Give them every now and then, say twice a-week, a little rice boiled in milk and sweetened with a small quantity of sugar. Also put a very small portion of magnesia instead of saffron in their drinking water, and in addition to grass seeds and lettuce leaves give them some groundsel, watercress, chickweed, and a little piece of apple sometimes. If the birds are disposed of their own

accord to bathe, give them a tepid bath, but be sure to keep them out of cold air draughts, and see that their sand is both dry and gritty and changed every day. Discontinue the bread and milk, and do not attempt to put lard nor grease of any kind on the bare parts. Are you sure there are no parasites in the cage or on the birds?

LIGURIAN BEES (*A Sleeper*).—Write to both parties, ask for their charges, and then select which you prefer.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	A.M.				IN THE DAY.					
	Barom-eter and Sea Level.	Hygrome-ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem-perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1873.	Inches.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	In.
March.										
We. 19	29.889	83.9	36.6	N.E.	40.3	42.7	33.5	61.4	35.3	—
Th. 20	29.974	40.6	38.2	N.	41.6	46.2	36.4	77.6	33.8	0.070
Fri. 21	29.858	37.0	36.2	N.	40.8	40.5	34.1	67.2	30.3	0.110
Sat. 22	29.932	41.4	39.4	S.E.	40.1	40.9	31.8	68.8	25.2	0.015
Sun. 23	29.990	42.5	41.8	N.	40.8	52.3	34.9	76.7	32.3	—
Mo. 24	30.036	44.4	43.8	N.	41.6	61.7	31.8	97.4	32.8	—
Tu. 25	30.150	48.2	44.9	N.E.	42.9	53.7	35.3	98.8	52.0	—
Means	29.973	41.9	40.1		41.1	50.4	34.5	81.8	32.2	0.195

REMARKS.

19th.—A dull and very cold day, piercing wind; very little sun, but no rain.

20th.—Rather dull all day; cold, and occasional slight gales of snow, and wind high; the morning the finest part of the day.

21st.—Dark disagreeable morning, rather brighter between noon and 2 P.M., after then cold and miserable.

22nd.—Very fine morning, white frost; fine and bright all day, but the wind very cold.

23rd.—Showery morning, fine after; but rather dull, though much warmer.

24th.—A most beautiful day—bright, dry, and warm, and splendid starlit night.

25th.—A very fine day, but the wind colder than yesterday.

Temperature somewhat higher than last week, with larger daily range; the sun at times powerful, but counteracted by the cold northerly winds. The last two days mild and spring-like, almost the first to which that term could properly be applied.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 26.

A LITTLE bright weather has improved the quality and colour of produce from under glass, but still the quantity is somewhat limited. The supply, from out of doors and the Continent, of ordinary rough goods is sufficient for the demand. English Apples are scarce, but American sorts still imported in large quantities.

FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples.....	1	sieve	0 0 0	Mulberries.....	1	lb.	0 0 0
Apricots.....	1	doz.	0 0 0	Nectarines.....	1	doz.	0 0 0
Cherries.....	1	per lb.	0 0 0	Oranges.....	1	100	4 0 0
Chestnuts.....	1	bushel	12 0 0	Peaches.....	1	doz.	0 0 0
Currants.....	1	sieve	0 0 0	Pears, kitchen.....	1	doz.	1 0 0
Black.....	1	do.	0 0 0	dessert.....	1	doz.	0 18 0
Figs.....	1	doz.	0 0 0	Fine Apples.....	1	lb.	6 0 0
Flageolets.....	1	lb.	0 0 0	Plums.....	1	doz.	0 10 0
Cobs.....	1	lb.	2 0 0	Quinces.....	1	doz.	0 0 0
Gooseberries.....	1	quart	0 0 0	Raspberries.....	1	lb.	0 0 0
Grapes, hothouse.....	1	lb.	10 0 0	Strawberries.....	1	10	2 0 0
Lemons.....	1	100	6 0 0	Walnuts.....	1	bushel	15 0 0
Melons.....	1	each	0 0 0	ditto.....	1	100	2 0 0

VEGETABLES.

	s.	d.	s. d.		s.	d.	s. d.
Artichokes.....	1	doz.	3 0 0	Mushrooms.....	1	pot	0 2 0
Asparagus.....	1	100	5 0 0	Mustard & Cress.....	1	punnet	0 2 0
French.....	1	15	0 0 0	Onions.....	1	100	3 0 0
Beans, Kidney.....	1	100	2 0 0	pickling.....	1	quart	0 6 0
Beet, Red.....	1	doz.	1 0 0	Parsley per doz. bunches	1	0	4 0
Broccoli.....	1	bunch	0 9 0	Paranips.....	1	doz.	0 9 0
Cabbage.....	1	doz.	0 1 0	Pens.....	1	quart	6 0 0
Capsicums.....	1	100	0 0 0	Potatoes.....	1	bushel	4 0 0
Carrots.....	1	bunch	0 6 0	Kidney.....	1	do.	0 0 0
Cauliflower.....	1	doz.	2 0 0	Round.....	1	do.	0 0 0
Celery.....	1	bundle	1 6 0	Radishes.....	1	doz. bunches	1 0 0
Coleworts.....	1	doz. bunches	2 6 0	Rhubarb.....	1	bundle	0 3 0
Cucumbers.....	1	each	1 6 0	Salsify.....	1	100	1 0 0
Endive.....	1	doz.	0 0 0	Savoy.....	1	doz.	2 0 0
Endive.....	1	doz.	2 0 0	Scorzonera.....	1	100	1 0 0
Fennel.....	1	bunch	0 8 0	Sea-kale.....	1	basket	1 0 0
Garlic.....	1	lb.	0 6 0	Shallots.....	1	lb.	0 3 0
Herbs.....	1	bunch	0 3 0	Spinach.....	1	bushel	3 6 0
Horseradish.....	1	bundle	3 0 0	Tomatoes.....	1	doz.	0 0 0
Leeks.....	1	bunch	0 2 0	Turnips.....	1	bunch	0 8 0
Lettuce.....	1	doz.	1 0 0	Vegetable Marrows.....	1	0	0 0 0

POULTRY MARKET.—MARCH 26

We have a veritable dearth of good poultry. The weather of the last two months has rendered rearing almost an impossibility, hence the scarcity. It will probably last a month.

	s.	d.	s. d.		s.	d.	s. d.
Large Fowls.....	1	6	to 6 0	Pheasants.....	1	0	0 0 0
Smaller ditto.....	1	6	0 5 6	Partridges.....	1	0	0 0 0
Chickens.....	1	4	0 4 6	Hares.....	1	0	0 0 0
Goslings.....	1	8	0 8 6	Rabbits.....	1	5	1 0
Guinea Fowls.....	1	3	6 4 0	Wild ditto.....	1	0	1 0 0
Duckings.....	1	4	0 4 0	Pigeons.....	1	0	1 2

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 1—7, 1873.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.					
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	Days.	m.	s.			
1	TH	Meeting of Royal and Linnean Societies.	61.4	39.2	50.3	16	33	41	21	47	10	7	1	0	5	3	4	121
2	F		62.7	39.1	50.9	15	31	4	22	7	6	8	56	0	6	3	11	122
3	S	Valisnerius born, 1661.	62.4	42.2	52.3	20	30	4	24	7	11	9	38	1	7	3	14	123
4	SUN	3 SUNDAY AFTER EASTER.	62.4	38.5	50.5	16	28	4	25	7	21	10	8	2	9	3	24	124
5	M	Meeting of Entomological Society, 7 P.M.	62.9	39.0	50.9	22	26	4	27	7	31	11	31	2	9	3	29	125
6	TU	Meeting of Zoological Society, 8.30 P.M.	62.3	38.5	50.4	16	24	4	29	7	43	0	49	2	10	3	34	126
7	W	Royal Horticultural Society's Rose and Azalea Show opens.	60.3	39.4	49.8	18	22	4	30	7	52	1	4	3	11	3	39	127

From observations taken near London during forty-three years, the average day temperature of the week is 62.1°; and its night temperature 39.4°. The greatest heat was 84°, on the 6th, 1862; and the lowest cold 20°, on the 6th, 1865. The greatest fall of rain was 1.26 inch

GRAPE-KEEPING.

BELTON GRAPE ROOM, 1872 AND 1873.



UNDER the above heading last spring in THE JOURNAL OF HORTICULTURE, vol. xxii., p. 86, you published an account of my failure in keeping Grapes in bottles of water in a room erected specially for the purpose, and with that account is a plan. I there stated particulars of the treatment to which the Grapes had been subjected from the time of cutting them, and asked for information on the subject. In addition to the writers of private letters, conveying information from many of the highest authorities, I have to thank the following who kindly responded—namely, Mr. Nisbet and Mr. Douglas in No. 569, page 169, and Mr. Nisbet for his able article, page 211, and in the following numbers Mr. Potts, Mr. Roberts, and Mr. Dodds.

If the system of keeping Grapes in bottles of water in rooms is to be of any value to the horticultural community it must be reduced to a safe practice, founded on natural laws, so that, when the Grapes are thoroughly ripe, and not till then, they may be all safely cut, and placed at once in the Grape-room in bottles of water, each containing a little charcoal, there to remain until required for use, be it in two, four, or six months, and this, too, without involving so much watchfulness as is usually considered necessary. Now, by the time a Vine has thoroughly ripened its fruit, its principal leaves are ripe also, and the support of the fruit in the shape of moisture, from this time at least, gradually diminishes until, when the leaves fall, very little moisture is received or required by the fruit; still the Vine continues to supply sufficient to maintain the berries and their footstalks in perfect condition for months after being ripe if properly treated by keeping them cool and dry. Any excess of moisture supplied to the berries at this time and onwards, either through the wood or air, is at the expense of the flavour and keeping properties of the Grapes, and on this nicety in the supply of moisture to the bunches when cut from the Vine and in a room, as above mentioned, hinges the whole cause of failure or success in keeping them perfect for any length of time.

The best practical information is very frequently gained through failures, and having failed, as already stated, I determined to institute a series of experiments in order to arrive at a just and safe mode of supplying such an amount of moisture to the bunches through the wood as would suffice to keep them perfect without the danger of supplying too much—in short, to follow nature as closely as possible; and this I have proved can be safely done, simply by half-charring the cut end of the branch upon which the bunch hangs before putting it into the bottle of water. By taking this precaution a great amount of watchfulness, care, and labour is saved. The half-charring the cut partially closes the pores of the wood, and only a limited quantity of water can pass to the fruit.

I made in the autumn of last year some alterations in

the Grape-room at Belton, added two extra ventilators at the lowest part of the room in the door and wall opposite, with slides, stopped the one previously in the floor, where I conceived moisture had gained access through the grating, and laid a flow and return 2-inch pipe on the floor round the room. Having done this I commenced the experiment intended, and which I have been requested by many gardeners to publish, but to do this would take up too much of your valuable space. However, it may be advisable to state a few failures by way of showing "breakers ahead." Circumstances enabled me to keep the Grapes hanging on the Vines a month longer than in 1871; therefore the first lot was cut on the 9th of December. I had either to cut them then or lose them through the wet continually dropping, in some cases running into the bunches from the roof, therefore only those bunches so circumstanced were cut at this time; those previously cut were for the purpose of experiment.

The bunches were placed in the water at various depths, some scarcely touching it; these required much careful watching, some being short, some having too much water, and to keep them for a month or five weeks until they were required for use entailed too much labour in drawing them out and then putting them back into the water, cutting-out berries, &c. So practically this was a failure, although by constant attention they were fairly kept for this short time. Left hanging on the Vine they would all have disappeared in the four or five weeks. On the 14th of December twenty-five bunches were cut and put into the water, little more than touching it; three of these were weighed at the time, and proved to be 2 lbs. 10 ozs., 2 lbs., and 3 lbs. respectively. When reweighed on the 9th of January they had gained in weight, and by the 20th the largest bunch had gained a little over half an ounce, but there was no appearance of cracking or moulding, and for fear of this occurring, they were all taken out, and remained out of the water twenty-four hours. I then had cement mixed with hot water rubbed into the pores of the Vine wood, and some of it charred; after this all were returned to the water, and they kept well for the remainder of the time.

On the 18th of December another lot was cut; half of these had cement rubbed into the wood, and the other half had the cut-end of the shoot half charred put into the water. Three bunches were weighed, and their stems stuck deeply into large roots of Mangold. Three of the cemented bunches were weighed, and three of the half charred. In four or five weeks those stuck in the Mangolds were losing their footstalks, and in six weeks began to shrivel; they lost 1½ oz. during the time. The three cemented bunches when cut from the Vine weighed in the aggregate 6 lbs. 10 ozs., and when weighed again on the 14th of January their weight remained the same; by February 14th they had lost three-quarters of an ounce, but a few berries had been cut out. The three bunches that were half-charred weighed in the aggregate 5½ lbs., and had neither gained nor lost on the 14th of January, but by the 14th of February they had lost a little over a quarter of an ounce in the three bunches. This is,

perhaps, nearly what would have been the case had they remained on the Vines; and on the 14th of April Mr. Boulton, my successor at Belton, informed me these bunches were in every way in splendid condition both in footstalk and berry, and I am further informed that not a berry had been cut out of the bunches from the first. This I consider is conclusive as to the merits of half-charring the cut before insertion in the water.

On the 3rd of January another lot was cut and half-charred; these kept beautifully to the last, lost very few berries, and caused little trouble.

On the 11th of February another lot was cut, and in order to satisfy myself as to the capability of the bark to take up water the cut-ends of all those branches on which the bunches hung were quite sealed up with a composition of shellac and spirits of wine rubbed into the pores of the wood, when dry rubbed over again with the same composition, and when again dry the ends were put as deeply into the water as the length of the branch would allow. By the 25th the footstalks exhibited signs of distress, clearly showing that no water had passed through the bark. The sealed ends were at once cut off, and the bunches put into the water; they recovered in a couple of days, were then taken out and dried, half-charred, and re-inserted in the water. After this the Grapes kept perfectly as long as required, and I had no more trouble with them.

The last house of Grapes was cut on the 27th of February; the ends of all the shoots were half-charred, then put into the water irrespective of depth, as I had previously proved that water did not pass through the bark. These kept perfectly to the last without any further trouble, as, I believe, very few berries had to be taken out. In all cases, by keeping perfectly, I wish it to be understood that I mean the footstalks of the berries remained green and firm and the berries plump, retaining their bloom and flavour.

The varieties of Grapes kept as above at Belton were chiefly Muscat of Alexandria and Black Alicante, with Madresfield Court, White Tokay, and White Nice. Madresfield Court did not keep well after the middle of January. White Tokay kept well, as also did White Nice, although the last-named were large bunches, but when placed in the room their shoulders were tied up. The Muscats kept perfectly when charred or cemented; when not so treated the skin of some of the berries was discoloured, showing the effect of taking up too much water.

I consider the past has been an unfavourable season for keeping Grapes, owing to the unusually wet late autumn and winter, and the mildness of the latter. From the 9th of December to the 15th of February inclusive there were forty-nine days on which the thermometer indicated 40° or upwards, the highest being 53° on the 3rd of January. I ought to say in conclusion that the Grape room was kept thoroughly dry and as cool as the external temperature would allow. Plenty of air and light were given on all favourable occasions. The pipes were used only to dry the room, and for this purpose the heat was turned on during the early part of fine days, when plenty of air could be given at the same time. In all cases the heat was shut off by two o'clock in the afternoon, so that the pipes were cool by the time the room was closed. I had canvas pads stuffed with hay made to fit inside the windows and ventilators so as to be applied in a few minutes. In case of sharp frosts the doors and windows were also protected by thick canvas outside, and by these means a considerable degree of frost could be kept out without having recourse to the pipes, which should be used only when other means fail. Mr. Nisbet says very truly the three evils to be guarded against are damp, frost, and artificial heat; and I will add a fourth—namely, too much water being taken up through the pores of the wood. It is quite unimportant whether the bottles are stoppered or not.—W. MOORE, late Gardener to Earl Brownlow.

NEW ROSES AT SOUTH KENSINGTON— AURICULAS.

Why need my good friend who objects to my judgment write with such acerbity? Surely one may question the decision even of the Floral Committee without being considered presumptuous. One might almost imagine it was some newly elected member, who, proud of his honours, was anxious like a *preux chevalier* to defend his lady-love against all comers. I am no way convinced by your correspondent's notes that I am wrong, and time will show whether my judgment will be en-

dorsed by Rose-growers generally. I do not think *Lyonnais* or *Président Thiers* worthy of the honours they received, and I do maintain that, although *Etienne Levet* was slightly defective, it ought to have supplanted one of them; and with all humility I would here say that it is just possible that the judgment of one who has lived among Roses may be quite as likely to be correct as the decision of a heterogeneous Committee, many of whom, perhaps, never grew a Rose, however celebrated they may be in other directions, and who decide by majorities whether a flower is to be certificated or not.

Mons. Claude Levet, alluded to by your correspondent, I had already so marked as a valuable Rose that I secured the bloom to have a drawing made of it for publication; and Mr. George Paul's foreman, whose opinion I should be as much inclined to take as that of anyone I know, says it is the best Rose of this year that he has seen.

A word or two as to the *Auriculas* on the 16th. If the show last season was the best seen in London for many years, one may without question say that the show this year was the poorest. I have grown *Auriculas* for thirty-five years, and never remember to have seen them so late as they are this season. In all my collection I could not get six fully open, and other growers were equally late, while as a rule plants, though healthy, are not throwing up strong trusses. It is one of those disappointments all growers of flowers must meet with, even although their theories may be good and their practice correct.—D., Deal.

CULVERKEYS.

The popular name for *Cowslips* in this part of Kent (near Ashford) is *Covekeys*, the villagers never calling the *Cowslips* anything else, while the *Oxlips* they call *Cowslips*. It seems to me as near *Culverkeys* as any of the names mentioned in the Journal, especially as they have curious modes of pronouncing words, frequently leaving out letters entirely.—EDITH DOMBRAIN, *Westwell Vicarage*.

THE term *Culverkeys* is in general use among all the poorer classes of this neighbourhood, and is applied to the *Cowslip* (*Primula veris*), while the *Oxlip* (*P. elatior*) they term *Cowslip*. *Culverkey* wine is a much-admired beverage. Of the derivation of the word I can give no opinion.—E. D. SWAN, *Hothfield Rectory, Ashford, Kent*.

THE *Culverkey* is well known in Somersetshire, and applies to the *Bluebell* (*Hyacinthus non-scriptus*). In Oxfordshire and Essex the same flower is by some called *Culvers*. I trust this may help to clear-up the mystery.—A GARDENER, *Balsall Heath, Birmingham*.

[So far is our "GARDENER" correspondent, and our two manse correspondents from clearing-up the mystery, that they have made it more mysterious. If, in Kent, *Cowslips* are called *Culverkeys*, then they are not the flowers that are alluded to in the verses of Dennys in 1612, for he distinguishes them especially as being blue, "azor (azure) *Culverkayes*." Walton expressly distinguishes them, for he says, "Looking down the meadows I could see a girl cropping *Culverkeys* and *Cowslips* to make garlands." If, too, the *Cowslip*, *Hyacinthus non-scriptus*, and *Meadow Orchis*, are in various localities known as "*Culverkeys*," then it would seem that our country-folk apply the name to any flower having a cluster of flowers on the top of a common stalk. Yet we do not swerve from our conclusion that the name is derived from the ancient British, or Welsh, and that the name in that language was appropriated exclusively to the *Meadow Orchis*.—ENS.]

PRINCE ALBERT PINE APPLE.

MANY thanks to Mr. J. Foden for his descriptive explanation of the *Black Prince* and *King Alfred Pine Apples*. Anything that has a tendency to popularise a variety of *Pine Apple* is perused with interest. According to the account at page 315, I am of opinion that *Prince Albert* remains distinct, and has no connection whatever with *Black Prince* and *King Alfred*—the two creditable productions of the deceased Mr. Joseph Foden.

The great peculiarity or characteristic of Foden's *Black Prince*, throwing-up its long fruiting stem without any appearance of fruit for a long time, never occurs with the variety which has so long retained the unquestioned name of *Prince Albert*. I have a strong aversion, for obvious reasons, to the naked

stem and invariable minimum produce of the pedestal type. Including Prince Albert, the finest fruits in every respect are produced by plants which at once show a vigorous formation, and remain at a medium elevation from the socket. The purple-tinted leaves of King Alfred I regard as no reliable distinction. All varieties when exposed to sun and light are of the same hue. It is to be regretted that Mr. Wright's statements at page 218 are not corroborated by Mr. J. Foden. Mr. Wright tells us, in the first place, that it is Prince Alfred, and not Prince Albert, and refers to Mr. J. Foden for confirmation of this, when Mr. J. Foden tells us, in the first place, that he is not aware that there ever was a Pine Apple called Prince Albert or Prince Alfred. Such being the case, how can he agree with me that these two are the same, and they are only Foden's Black Prince? It is quite possible there may be a Pine in cultivation which Mr. J. Foden has never seen. I may inform him that there are few of the principal Pine-growing places in England or Scotland but possesses a variety named Prince Albert.—J. M. C.

DWARF HARDY PLANTS SUITABLE AS EDGINGS TO YOUNG SPECIMEN TREES.—No. 2.

Oxalis corniculata rubra.—This is well adapted for edging purposes, for although the plant dies down a considerable portion of the year, its foliage is good all the summer months. It is hardy, and accommodating enough for all purposes. *Oxalis Bowoi* I have never been able to make much of, but that, perhaps, may have been from want of perseverance rather than any defect in the plant, as when well grown it makes a lovely bed.

Prunella optima.—A pretty purple-flowering dwarf plant of compact habit, and strongly to be recommended. It is also accommodating in every sense of the word, for although not a gross grower, it seems to thrive equally well in sun or shade, in moist or dry situations, while its flowers are very pretty.

Pansies.—In general I have not been able to flower these well. Our hot summers seem to punish them so severely that I cannot recommend them for duty in a dry situation; but in a different situation most likely they would bloom well.

Pink.—Having alluded to this under the head *Dianthus*, nothing more need be said, only that on calcareous soils, where it thrives so well, it cannot be planted too extensively, for both the character of flower and habit of the plant alike fit it for the front place in a class of this kind.

Phlox verna and others.—This dwarf species with deep rose-coloured blossoms makes a nice broad margin, and is admirably suited for covering ground about a tree not branched to the ground, as it is a spreading plant, and makes an excellent carpet, more especially on a soil approaching to peat. There are several varieties of it, but none better than that which has flowers of a deep rosy-purple colour. Another species, *P. setacea* or *P. subulata*, is widely different, but dwarf, and equally eligible. With it I have never been able to succeed well, nor have I managed *P. prostrata* well enough to be able to recommend it. The tall kinds, of course, are not suitable for our present purpose.

Pulmonaria officinalis variegata.—The blotching of the foliage of this plant equals that of many of our exotic Begonias, and looks well all the winter; the plant is therefore of service for winter decoration. It is of rather strong growth, and perhaps occupies more room when full-grown than can often be allowed, but being accommodating, it may be planted where other subjects will not grow.

Primroses.—I enter upon these with some misgivings, for the whole family are such favourites that I fear I may be led too far in my commendations; moreover, they offer much variety, and their flowering is spread over a great number of months. Who is there, in traversing the shady lanes of a rural district in March or April, but must admire the floral gems that stud the hedgebanks? and I am not sure that any of the Primroses of our gardens are in reality more beautiful than the wild one. At the same time our garden varieties have also their especial claims to notice.

Before mentioning two or three of the most prominent varieties I may say that the Primrose in general likes a somewhat moist situation, and one partially shaded in summer is an advantage. This, I believe, holds good of all the family, the Auricula, perhaps, excepted. We also find that division of the plants every second or third year is advantageous. Single robust-growing varieties need division oftener than the slower-growing double kinds, and as this mode of propagation is the

only certain way of insuring the continuance of the exact varieties, it is well to practise it as early in the spring as convenient. Necessity has often compelled us to divide the plants when they were in full bloom, which is not, perhaps, the best time, but the plant is very accommodating in that way. Where a rather shady piece of ground not too dry can be had as a reserve or nursery, this plant may be extensively grown for early spring gardening, and it can be transplanted with greater ease than most things. It is also easily raised from seed, which is often self-sown in unpromising places, and new varieties are sometimes met with in such spots. A friend of mine found a double yellow variety in a wood a long way from any garden or cultivated ground, and brown and dark-coloured varieties are not uncommon. If gardeners would take the trouble to now and then plant a crimson or magenta-flowered plant here and there amongst the wild Primroses, most likely fresh cross-breeds would be produced. I have often done this, and hope to see some of the cross-breeds by-and-by. I may add that the crossing of the garden varieties certainly gives us kinds partaking partly of the Polyanthus and Cowslip, in conjunction with the Primrose, for it is not uncommon to find plants having both single-flowering stems and also well-formed umbels as in the Polyanthus, while the pendulous habit of the Cowslip is also represented. Probably further varieties will be produced when the new Japanese Primrose shall have become more plentiful; but as regards colour, our home kinds give us all the colours that we have from the east; nevertheless, there is no doubt an important future before this plant, and with such other species as *P. cortusoides amena* and *P. erosa denticulata* there is ample scope for hybridisation.

Single White Primrose.—I believe I have on more than one occasion expressed an opinion that this is the most useful of the family, coming into flower so much earlier than all others. We have frequently had a good display of this variety in November, long before the wild Primrose or the other kinds showed any signs of flowering. Its flowers are of a clear white, too, and the plant is a most abundant bloomer. Some we have in bloom at the time I write have done duty for quite five months. I think the season we had them in most abundance in autumn was 1871. A spurious variety of this kind appears to be more prevalent than the true early-flowering one; and I also find that of seedlings some of them come with a creamy white tint instead of the pure colour, thus showing a tendency to revert to the wild form. When once a stock of it is obtained it is best to propagate it by division of the roots; and it is well not to be in too great a hurry in doing this, as small plants rarely attain sufficient size in one year to allow of their being divided with so much advantage as when left for two years where they are growing. This remark, of course, holds good of all kinds alike.

Single Mauve Primrose.—This, like the last, is a very free bloomer, but is not by any means so early a bloomer, neither does it look so well in the distance as the white. There are several tints of this colour obtainable by seed, some of them being much brighter than the original, and approaching to magenta.

Single Crimson Primrose.—A variety of this I have had some years occasionally covered with umbelled flowers like the Polyanthus, while a great number of the flowers are on single stems. It is of a pretty clear colour, and well deserving of notice, more especially if hybridising be attempted, for it is likely to impart a useful colour to the progeny.

Single Yellow of a deeper tint than the wild Primrose.—I have not been able to make much of this, and therefore cannot say anything of it; only if it could be made to grow as freely as the first two named it would be an acquisition, as its flowers are of a fine golden colour, but I fear it is miffy.

Single Primroses of Other Tints.—As there is no limit to the colours that possibly may be obtained by seed, I need only say that promising seedlings with violet, crimson, magenta, and other coloured flowers are now and then met with, with a bluish-tinted lilac, the latter, no doubt, destined to be the parent of a better class of blues. Mr. Divers, gardener at Wierton, near Maidstone, has many promising seedlings, and has for years practised fertilising this family with the Polyanthus, Cowslip, and wild Primrose, and his seedlings at flowering time are interesting, and doubtless will hereafter be found valuable.

Oxlip or Hose-in-Hose Primrose.—I am only acquainted with the yellow form of this, and it is exceedingly handsome, the flower-stems being as long and as robust as the strongest-growing Polyanthus, and the distinction between the two flow-

ers clearly seen. It is very pretty and well worthy of notice. I should much like to see a white as well as other coloured varieties of this distinct species, as it is so conspicuous when well grown.

Polyanthuses.—There is great diversity, and as they produce seeds even more freely than the Primrose, and these germinate more quickly, the varieties are endless; and now and then flowers approaching the requirements of the florist are met with, but in general they are less robust than the common Polyanthuses, and consequently not so fitted to rough it for the purpose here indicated. I should much like to see a pure white Polyanthus. Yellows there are, evidently akin to the Cowslip, but I am not fortunate in having them.

Double Yellow Primrose.—It may seem odd to make the assertion, but I have assuredly seen more plants of this in a cottager's garden quite fifty years ago, than I have ever met with on any occasion since, and my own stock of it is very limited. Like most of the family it requires more shade and moisture than it often receives in fashionable quarters, but where it does thrive well nothing can be more handsome. It flowers earlier than the Double White, and is, perhaps, a better grower, but it is not multiplied so quickly as the single one. Nevertheless, to those having a moister climate than we have in Kent, I would strongly recommend it.

Double Mauve or Lilac.—This is certainly a more robust grower than the yellow, is more frequently met with, and good-sized plants look well when in full flower; but in the distance it is not so showy as the single varieties.

Double White Primrose.—This is, perhaps, the latest of the whole family in flowering, and is the slowest grower, but when fully out it is handsome, and as a variety is indispensable.

Double Polyanthus.—I have not been able to do much with this, and, therefore, can only say its flowers are handsome, and in other places it may thrive better.

I cannot close this notice on the Primulas I grow in quantity without strongly recommending those intending to plant them extensively to commence with the single kinds; they present endless varieties, and it is not too much to say they can be multiplied twice as fast as the doubles, and as a batch of seedlings often bring out colours not previously known, the interest attached to them is much enhanced. Perhaps the tints most desirable now a-days are those bordering on blue, and some of the kinds having a lavender hue might in time supply us with the desired colour. A deep orange is also wanted. One of the most important merits a Primrose can have, earliness of flowering, ought also to have its claim to notice, and as I have not met with any variety yet coming-in so early as the single white alluded to (this may, nevertheless, be not the case with all single whites), I need only say that for winter-decorative purposes one that commences blooming in November or before, is worth a dozen that only come into use in April.

Dwarf Double White Rocket.—Where this grows well it makes a neat edging, but it is not everywhere that it thrives, and like the Double Yellow Primrose was possibly more plentiful fifty years ago than now. I lost sight of it for many years, and only accidentally met with it near Glasgow a few years ago. I find it is not by any means a free grower, and is liable to die-off at the neck. Perhaps our soil does not suit it, at all events the tall Rocket grows fast enough, while this merely exists. It is not more than 8 or 10 inches high when in full flower, and is a neat grower.

Ranunculus.—I have only once or twice attempted them and cannot say much on my success. The old Bachelor's Buttons grows too tall for my purpose, and the bulbous kinds leave the ground too long bare to merit notice.

Santolina incana.—This and its fellow, *S. Chamæcyparissus*, are both good when an edging of upwards of 8 inches high is wanted, for they soon attain that height and cannot well be kept lower. A neat foliage of a silvery grey colour, with a sturdy habit, renders this plant very suitable for the purpose.

Salvia argentea.—The thick blanket-like foliage plant is also better for a large than a small bed. It is easily obtained from seed, but in winter its appearance is not ornamental.

Saponaria ocyroides.—Having used this many years ago I include it here, but fear I have lost it. As a neat dwarf plant it well deserves a place, its blooms being also interesting.

Saxifraga.—This very important family presents many members all fitted for the present purpose. Some of them are remarkable for the beauty of their flowers, while others and by far the greater number are interesting from the character of their foliage. They also differ widely in the latter respect,

perhaps no family more so, for while some have the tiniest foliage imaginable, others as *S. calendulacea* have leaves almost as large as a Cabbage. I shall not, however, have to enter into the tall-growing kinds, but may say that amongst the dwarf ones with neat foliage like frested silver, *S. Aizoon* and *Aizoon minor*, as well as *S. pectinata*, *S. intacta*, and others look well regardless of all flowers, while another class represents a section resembling in some measure the Lycopodiums of our plant houses. Amongst these *S. hypnoides*, *S. hirta*, *S. cæspitosa*, *S. hirsuta*, and *S. Stansfieldii* may be taken as a sample. They have all deep green foliage of the neatest possible form. Another section presents us with flowers of considerable beauty, as *S. oppositifolia*, which, however, I have not been able to do much with; *S. dentata*, *S. Geum*, and *S. granulata plena*, all good. That which I grow most has leaves as long as the Willow and covered with hairs, giving it a silvery tint; the habit at the same time being very dwarf and compact, although the flower stem, when it does flower, rises upwards of 2 feet high; we have named it *S. crassifolia*, but I am not sure of the name being correct.

Sedum.—This family may also be divided into two classes—one remarkable for foliage, the other for its flowering qualities. Amongst the latter *S. roseum* is pretty, as is also *S. dentatum*, and better still *S. kamtschaticum*, the latter two being yellow, the first named rose-coloured. Then we have the succulent class, as *S. glaucum*, a great favourite with the London park gardeners. *S. album* is fast-growing, and so are one or two others, while in the Stoncrop way *S. Lydium* and *S. pulchellum* have some resemblance to the well known *S. acre*. All are of good habit of growth, and not particular as to site, at the same time a dry situation suits them better than one of an opposite character.

Silene Schafta.—A neat-flowering plant that ought not to be disturbed frequently; it is also somewhat miffy—i.e., does not like every place, and I am not sure that ours is the right one for it, for I find it goes off very much.

Soldanella alpina.—As with the last-named we have not succeeded with it well. I imagine it wants a peaty soil.

Spiraea japonica.—This does remarkably well with us and nothing seems to injure it excepting a sharp frost when it is far advanced in growth, as was the case in 1872. It is occasionally called *Hoteia japonica*, and the habit as well as the flowers of the plant is so well known and so universally admired that comment upon it is needless. It is propagated freely by division just as it is making a start to grow towards the end of March.

Spiraea Ulmaria variegata.—A variety of this with golden markings is very pretty both for pots and in the open ground, and it is as robust as the normal plant is when growing in some moist ditch or other suitable place. The variegated form is dwarf enough when growing on ordinary garden soil in a moderately dry place.

Spiraea Filipendula plena.—The very handsome foliage of this entitles it to a place as an edging plant apart from its ornamental cream-coloured flowers, which, though somewhat tall for small beds, are nevertheless excusable when the neat appearance the foliage of the plant makes all the year through is borne in mind. I strongly recommend it.

Stachys lanata.—Rather coarse, but useful where some other thing will not do very well.

Stipa glauca.—A greyish-coloured Grass of compact habit, and more persistent than most Grasses are. I am not certain if this be not the same as is called *Festuca glauca*, for although I had both from respectable nurserymen I could not distinguish any difference. *Stipa pennata* is another plant altogether, and not so well adapted for edging purposes, its feathery form when in flower being its merit.

Sempervivum californicum.—This very convenient-growing plant cannot be too highly recommended, and it has the recommendation of not needing to be replanted very often. I believe we have edgings of it that have been in their present position for ten years or more, and a good broad edging, say a foot or more wide, grown naturally, is prettier than the uniformity that is met with in fashionable flower-beds, where only large plants are used. When left to itself, the centre of the mass is elevated a little above the edges, and a dense uniform tuft is the result. It seems to like a good soil, but will also live and do well in a dry situation.

S. tectorum, the common Houseleek, is not so pretty as the Californian one, being smaller and more open.

S. globiferum.—As the name implies, this is globular, larger than a walnut, and the foliage thickly set in the same uniform

way as the Californian species, only not so flat. It turns brown in summer, but I do not think this any disadvantage, and it is perfectly hardy.

S. arachnoidum.—Somewhat like the last, only apparently enveloped in a sort of cobweb. It is of slower growth, and possibly not quite so hardy, but I have not had much experience of it.

S. Wulfiana.—This, like the Californian Houseleek, has a thick fleshy leaf, but is greener, and more like the common Houseleek.

S. Bollii is in the way of *S. globiferum*, but smaller, as are also *S. anomatum* and *S. Bearii*, but they seem to be perfectly hardy. I fear, however, that there is some confusion in the name of this plant, but *S. Bollii* is unquestionably good, and with me, at least, the easiest of culture.

Thymus micans.—A very dwarf hardy plant, rather of a bronze hue, neat and compact, with a slight odour.

Veronica.—A variegated form of one of the hardy herbaceous kinds is good, and makes a neat low edging. The flowers that are produced, though upwards of a foot high, are excusable, as when they are removed the plant is dwarf and compact.

Viola cornuta.—A permanent edging is just the place for this plant, for, with all its merits, it is not adapted for the flower-beds, where it has to be removed every year. It is too well known to require comment here.

Viola tricolor.—A hardy variety of the common Pansy, of a bright yellow, has stood one or two summers with me, as did also a pale blue some years ago. I am not in love with either of them, but for variety they may be tried.

Viola odorata.—The double Russian or Neapolitan Violet may be tried, as may also the single kind.

Besides the above many other plants are occasionally used. With Snowdrops, for instance, we have several beds edged, as well as one or two with Lily of the Valley. Crocuses do not succeed well with us, neither does the hardy Cyclamen, but that is no reason why they should not thrive elsewhere. The object aimed at is to edge round each tree or shrub with a neat compact plant that will in most cases look well all the year round, or, if it do not do so, the plant ought to possess more than ordinary merit at blooming time. I by no means intend to imply that the plants noticed are the only ones adapted for the purpose; most likely there are many others also good, which only want trying to bring them out. Choice florists' flowers are not needed in this case; they are too often of uneven growth, and not so accommodating as to site as others of a less refined character. Plants that have a neat appearance from January 1st to December 31st are infinitely better than objects which are only gay for a short time in summer.—J. REXSON.

PAINTING OF ORCHARD-HOUSE TREES.

This is a much better plan than simply brushing the trees over with a composition of lime, &c., the chief object of which is to exclude the air, and thus destroy animal life, also, probably, preserving the eggs of insects from hatching, as is the case in the preservation of eggs in limewater. The mixture of some vegetable oil, with something to give it body, seems a good idea, and as to killing the trees there is no fear. One of my under-gardeners used a mineral oil to kill the brown scale on an orange tree, the effect of which was to cause nearly all the leaves to fall off, though it answered well when confined to the older bark. The oil paint recommended by Mr. Bréhaunt (an old schoolfellow of mine more than forty years since) would have had the same good, without the bad effect. We use here creosote to keep hares and rabbits from gnawing the bark of fruit trees, and there is no injury to the bark. I have just cut off a piece of the bark of an Apple tree thus painted, and find it has not penetrated further than the thickness of paper; it was applied the winter before last. The trees are very healthy, and the creosote still protects them; probably winter is the best time for applying it.

As the quintessence of a lady's letter is often contained in the postscript, so is the venom contained in the tail of Mr. Bréhaunt's article. Two years are hardly too long a time for a tree to recover itself after having been overcropped. The only thing to be said in favour of the system is that "a bird in the hand is worth two in the bush," but this must depend upon the size and quality of the bird.—OBSERVER.

I FORWARD my experience in painting trees with oil, such as

is used on cart harness, which sets like varnish. I have about a dozen Apple trees which had been nearly killed by the woolly aphid. I tried other things, which proved useless, and this autumn, after pruning, I painted every shoot. It has apparently destroyed the aphid. We have had all sorts of weather this last few nights—wet in the early part, and 3° of frost in the morning. This is rare here, as I believe we are a little higher than Wolverhampton, and we are near to the highest tableland in England, so I am told.—A Novice, *Wolverhampton*.

THE WEATHER.

ACCUSTOMED as we are to regard east wind as an evil, yet the very frequent prevalence of wind from that quarter and from the north during the past month, by its retarding influence upon vegetation, will doubtless prove a real benefit. The present unkindly aspect of the weather here (in Mid-Sussex) is causing considerable anxiety, especially in regard to fruit prospects. A sharp frost set in on the evening of Wednesday, April 23rd, and continued to increase in intensity during the night, reaching its maximum of 7° at 3 A.M., the thermometer then standing at 25°. Frequent showers of snow and sleet fell during Thursday, followed by a slight frost at night; on Friday the snowstorms became heavier, and everything at all exposed was encrusted with the snow which fell during the afternoon, and so cold had the surface of the soil become that the snow lay till Saturday morning, and the thermometer fell to 23°.

Notwithstanding this untimely severity, the fruit trees appear to have sustained very little damage; both on Wednesday and Friday night the shoots of Peach and Nectarine trees having the shelter of a wide coping were stiffened with frost, yet the fruit escaped harm; the fully-expanded blossom of Pears, Cherries, and Plums is destroyed, but that which was only partially open escaped unscathed, with the exception of a slight browning of the petals. Bush fruits are also unharmed. The young foliage of many Kalmias and hardy Azaleas is destroyed, I conclude this was caused by the frost-laden wind, from the fact of some other plants of both genera, that were in some measure screened by high trees from the wind's full force, being unharmed.

A striking instance of the value of wall-shelter is evinced in a flourishing young plant of *Akebia quinata*; some of its shoots projecting a few inches from the wall are cut off, while all those that are quite close to it have sustained no harm.—EDWARD LUCKHURST.

TREATMENT OF YOUNG VINES.

I WISH your advice as to the proper treatment for a viney started at the end of March, newly planted with eight Black Hamburgh Vines. This is their first year, and I intend that they shall run wild this season—that is, to allow eight or ten canes to run from each Vine. I do not intend to fruit them till the year after next. I want to know whether it is better to give plenty of air on hot days, or the reverse. I take care to keep the house moist, and wet all the paths, especially in hot weather. I am afraid of giving too much air lest the Vines should not grow fast enough, still I wish to adopt that treatment which is the best. The house is a very fine one, south aspect, quite new, about 25 by 15½ feet. The Vines are planted inside the house in a border prepared for the purpose. Some of them have already made shoots about a foot in length. I shall be glad if you will say whether Vines should be kept very dry during their blooming season, and also whether you would advise a little heat at night during the time they are in bloom in order to get them through their bloom quickly. I should be glad if you will say if 80° Far. is too hot for sun heat at mid-day.—O. PERCIVAL.

[Although we advocate allowing young Vines to ramble rather freely with two or three canes the first year after planting, yet we are of opinion that eight or ten are too many by one-half or more, and of these there will, doubtless, be one shoot stronger than the rest. This should be trained in its proper position, allowing the others to ramble at will, providing, however, against injury of any kind. Those shoots that are not required should not be pulled or cut off, but stepped by pinching-off their tips. It is proper to keep the house moist and the Vines syringed in hot weather, but not so much so in cold unless weather, otherwise mildew will make its appearance. At such times gentle fire heat is almost a necessity.]

In rearing a house of Vines the aim with us would be to

encourage a short-jointed, moderately vigorous growth, rather than a coarse pithy one. To promote this result do not force the growth too much at first, but give plenty of air as long as the temperature does not fall below 60°, and if it advances to 75° or 80° at mid-day or later, with air circulating through the house, no harm will arise. At the beginning of June, when the Vines will be making roots very fast, 5° or 10° more heat will be beneficial. This amount can generally be secured by giving less air. Keep the Vines growing in this way until September or the beginning of October, when some attention must be paid to ripening the wood. No doubt the wood will be turning brown at some parts before this; however, the atmosphere of the house must be kept drier, but with heat and air in a moderate degree the ripening will go on in a satisfactory manner. After this has been secured, and the wood has become hardened, the season will be so far advanced that the Vines will show signs of going to rest; all moisture may then be withheld and plenty of air given, with less heat. It is not a good practice to allow the frost to get at the Vines, as was commonly done years ago; therefore, during the winter, plants may be kept in the house and fire heat applied to exclude frost.

Now, a few words with regard to water. In newly-made inside borders with plenty of drainage, Vines can scarcely have too much water, all through the growing season they will take water once a-week; it should be given with no sparing hand, for it is astonishing the quantity of water necessary to reach every portion of soil in well-drained newly-made borders. For free-setting Grapes of the Black Hamburg class keep the Vines dry during the blooming, but in very sunny weather, and at other times not too frequent, water may be thrown about the house with advantage. For shy-setting sorts of the Muscat class keep both the Vines and the atmosphere dry. A little fire at night is a great help to Vines in bloom, but not absolutely necessary to Black Hamburgs and some others that bloom in the height of summer.]

FLOWERS FOR OUR BORDERS.—No. 5.

RIBES ALBIDUM.—WHITE-FLOWERED CURRANT.

This plant is a variety of the red-flowered Currant, *Ribes sanguineum*, a shrub now found in every garden of the smallest pretensions, and was raised from seed in the gardens of Admiral Sir David Milne, Inveresk, near Musselburgh.

From the perfectly hardy character of the parent species and all its varieties, the ease with which they are propagated, and the beauty of their pendant flowers, which enliven the garden at a period when but few shrubs are in blossom, they are well deserving the place they occupy in the public esteem. The variety *albidum*, as well as *sanguineum*, varies in the colour of its flowers according to the soil in which it is grown, being palest in sandy soils; but it is probable that much of the differences observable in distinct specimens, may arise from the natural tendency of the plant to variation when raised from seed. The best varieties are slender-stemmed, and quite deciduous, but we have seen a specimen with a coarse arborescent stem, dense foliage, almost evergreen, and flowers of a far less ornamental character, followed by prodigious crops of insipid black berries.

They will thrive in almost any soil, but succeed best in such as is moderately rich and moist, the natural habitat of the species *sanguineum* being often in the neighbourhood of the Californian streams. Cuttings of the ripened year's wood, taken off in autumn, and treated as those of the common Gooseberry, will root readily in a sheltered border.

With the exception of the equally interesting *Ribes aureum*, or Golden-flowered Gooseberry, the plant now figured, with its sister varieties, are the only members of the Ribes family commonly found in cultivation, which, considering the beauty of many of the remaining species, is a matter of surprise. Among those less known, we may mention the elegant *Ribes speciosum*, with red flowers and long projecting stamens; the *R. cereum*, or Wax-leaved Currant, with roundish glandular leaves, covered with a thin layer of a wax-like substance; the *R. punctatum*, from Chili, with dotted leaves and greenish yellow flowers, borne in erect racemes; and handsomer still, the Snowy-flowered Gooseberry, *R. niveum*, with flowers of the purest white, and berries of a deep rich purple colour, which, unlike those of the other flowering-species, are of an agreeable flavour, and, according to Dr. Lindley, "when ripe, make delicious tarts, and would probably form an excellent means of improving the common Gooseberry, by hybridising."

All who have ever gathered a Gooseberry—and who has

not?—have, we do not doubt, heartily wished the bushes thornless, but they would scarcely prefer the habit of another of the family, *Ribes Menziesii*, published by Sir James Smith under the appropriate name of *R. ferox*, which he describes as "a very remarkable species, whose branches are thickly covered with tawny setaceous prickles, about a quarter of an inch in length, and armed under each bud with three very strong and pungent ones, an inch long, having sometimes lesser reflexed prickles at their base!" and what is worse, the young berries are "covered with prominent glandular bristles, which harden, as the fruit advances, into stiff sharp spines, so that whatever



Ribes albidum.

its flavour may be, it seems perfectly inaccessible in the common way of eating Gooseberries." Another species, *R. cynosbati*, the Dog-bramble Gooseberry, a native of Canada, has also prickly fruit.

Nearly all the Ribes grown as ornamental shrubs are natives of the North American Continent; one or two, however, are found only in South America, and a few in Siberia, Hungary, and other parts of Europe.—(W. THOMPSON'S *English Flower Garden*.)

PLANTS FOR LEAN-TO GREENHOUSE.

I HAVE a lean-to greenhouse, and I have a moderately large flower garden at the front and back of my residence. I want my greenhouse to supply me with bedding plants for the garden, and I also want to have a nice selection of the hardier greenhouse plants, such as Primulas, Roses, Azaleas, Camellias, Chrysanthemums, Geraniums, Fuchsias, &c. I have room for about two hundred moderate-sized plants. Can I grow Ferns in the same house, and in a bed under the front shelf, if so state the names of a few suitable? I have hot-water pipes in the greenhouse, but do not wish to use them until the autumn if possible, as I get too much heat; my boiler is too powerful, but in the autumn I will have other pipes connected with it to warm a coil in my hall, and will thus be more under control. I should also like some good variegated-foliaged plants for the greenhouse. I suppose a cold frame will be useful, and I am about to have one made.—T. H.

[You do not give the dimensions of your greenhouse, but there will be no difficulty in making use of it for the various purposes you mention to a greater or less extent. A cold frame as you propose will be useful, in fact, a necessity, for the rearing of seedling Primulas, Cinerarias, and Calceolarias; the former two may be sown now or a week or two later, and the latter in July. The different plants named below include a variety of colour and form, and are likely to be easily cultivated, and interesting to you. Ferns will grow well in the position you name.]

Azaleas.—Beauty of Reigate, Iveryana, Louise Margottin, Admiration, Stanleyana, Vesuvius, Mars, Cheloni, Duc de Brabant, Glory of Sunninghill, Duc de Nassau, Kinghornii, and for forcing *Indica alba* and *A. amena*.

Roses.—Tea-scented: Gloire de Dijon and Maréchal Niel. Hybrid Perpetuals: Géant des Batailles, Victor Verdier, Charles Lefebvre, Louise Darzins, Beauty of Waltham, Baronne Prevost, La Reine, Jules Margottin, and Boule de Nègre.

Camellias.—Lady Hume's Blush, Fimbriata, Alba plena, Imbricata, Wilderii, Jubilee, Bealii, Princess Bacchochi, Teutonia, Countess of Orkney, and Opima.

Geraniums.—French, Dr. Andry, Eugène Duval, and Madame Charles Keteleer. Show, Celestial, Desdemona, Joan of Arc, Mrs. Hoyle, Queen of Whites, and Etna. Fancy, Ellen Beck, Delicatum, Madame Sainton Dolby, Formosa, Evening Star, and Cloth of Silver.

Fuchsias.—Rose of Castille, Lady Heytesbury, Annie, Minnie Banks, Venus de Medici, Souvenir de Chiswick, Black Prince, Beauty of Kent, War Eagle, Avalanche, Vainqueur de Puebla, and Madame Cornelissen.

Chrysanthemums.—Pompons, Cedo Nulli, Boh, Lizzie Holmes, Duruflot, Golden Cedo Nulli, Aurora Borealis, Brilliant, Bijou de Horticulture, White Trevena, General Canrobert, Sainte Thais, and Surprise. Large-flowered, Dr. Sharpe, Julie Lagravère, Lady Slade, Princess of Wales, Little Harry, Golden Beverley, White Globe, Jardin des Plantes, Empress of India, Mr. Brunlees, Jewess, and John Salter. Japanese or late-flowering, Red Dragon, Wizard, James Salter, and Hero of Magdala.

Ferns.—Adiantum cuneatum, formosum, and trapeziforme, Asplenium bulbiferum and lucidum, Cyrtomium falcatum, Doodia caudata, Nephrodium molle, Pteris serrulata, serrulata cristata, longifolia, and tremula. A few of the greenhouse Selaginellas may be introduced, such as Selaginella denticulata, braziliensis, as well as S. Martensii and stolonifera.

Variegated-foliaged Plants.—Aralia Sieboldii variegata, Farfugium grande, Præna Veitchii, Osmanthus ilicifolius variegatus, Bambusa Fortunei variegata, Yucca aloifolia variegata, Abutilon Thompsoni, Coronilla glauca variegata, Agapanthus umbellatus variegatus, Variegated Myrtle, Hydrangea variegata, Arundo Donax variegata.

The Chrysanthemums will not require your greenhouse till the autumn; your cold frames will grow them for the present, afterwards grow them out-doors.]

THE POTATO DISEASE.

Answers to Circular addressed to Cultivators of Potatoes in the Counties of Ross, &c. By Colonel J. A. Grant, C.B. With Remarks by Professor Church and Dr. Hooker. Inverness: Printed for Private Circulation, 1873.

The Potato Disease: Its Cause and Remedy. By SAMUEL SMITH, M.R.C.S.E., &c. London: Smith & Allen, 1873.

Who was the "Man in the Iron Mask?" Who wrote "The Letters of Junius?" What causes the Potato disease? are questions that have exercised the ingenuity of many minds, but each has defied the inquirer. Leaving the question of the disease's cause, our own conclusion, after reading nearly all that has been written on the subject, and after many years of experience in Potato culture, is this:—Whole large sets of the earliest ripening varieties planted very early on a light soil resting on a gravelly subsoil, and manured for the previous crop only, usually afford Potatoes not affected by the disease.

The disease itself we consider is a gangrene of the tuber, a gangrene that affords a fitting nourishment for the parasitic fungus which hastens and completes the destruction of the tuber.

Colonel Grant's is by far the most trustworthy publication we have ever met with on the subject. He sent a circular containing twenty-eight queries to one hundred cultivators of the Potato in Scotland, and had from them fifty-five replies. The queries asked for a statement of the soil, drainage, elevation, aspect, manure used, varieties least diseased, when and what part was first affected, time of appearance, weather, protection, &c. Col. Grant gives this as the

"SUMMARY OF THE FIFTY-FIVE REPLIES.

Soil.—Light sandy loam upon gravel subsoil has proved to be the best soil, and dry moss probably stands next. It should be well worked up in autumn, manured with suitable manure, and left exposed in high drills during frost. In early spring it should be well cleaned, manured with vegetable ashes (potash), burnt earth, lime, guano, or artificial manure, according to the soil, and no animals nor carts allowed to trample it down.

Seed.—The best specimens of the tuber should be used as seed. They should be kept in a dry well-ventilated place, where

the temperature was not above 48°, and not below 35°. They ought to be of a kind which has not been introduced above twenty years, and of a variety which is known to bear fruit (plums). Before planting, the seed should be fumigated with sulphur smoke or dipped in the solution previously given, so as to destroy all trace of fungus upon its surface. The cattle might be fed with all diseased ones, as they relish them, or the fowls would eat them boiled. This is preferable far than allowing them to reproduce a hereditary disease.

The haulms contain the disease, and if they are carried to a Potato field as manure, they communicate the germs to the coming crop, but their ashes would fertilise the soil. Several East Lothian farmers, in their able reports, write that they had remarkable Wheat crops from the fields where they had not raised their diseased Potatoes; but this is owing, probably, to the soil not having been exhausted rather than to diseased Potatoes being a superior manure, and, in principle, I am inclined to condemn strongly such a process of planting the germs of a disease. Upon this subject we have the advantage of an experienced chemist's opinion—Professor Church—who writes me, "I think we may say that the disease could not be conveyed to the next crop, say of Wheat, nor to the Potatoes succeeding in the fourth or eighth year of the rotation, by ploughing-in the diseased tubers, &c. But indirectly it might do some harm by increasing the organic matter in certain soils, and in such cases, perhaps, burning everything that could be collected would be better. Often the Potatoes this year (1872) have been too rotten to be lifted at all. Possibly, if the crop were ploughed-in, and next-year Potatoes grown in a contiguous field, there might be some danger of their continuing the descent of the fungus."

Time of Planting.—Some have a preference to planting late in autumn, saying the frost would not harm the seed; and I am rather in favour of this, as the soil would act as a deodoriser to any existing fungus. But the main thing is to have fresh red-tinted seed, producing dark green haulms; to plant so early that plums would be formed by the time the disease season generally reached the farm, and never to lift till all the sap in the haulms has descended into the tubers.

Mode of Planting.—Wide apart, and upon the surface of the soil.

Manure.—There are as many kinds of manure as there are of soils and opinions upon both. The returns in question 6 show this; and without the time of planting, the quality and nature of the seed and soil, state of the field, amount of rainfall, and other causes only known to the farmer himself, it is impossible, without laboratory work, as Professor Church writes me, to give any particular Potato manure. But I have no doubt that a beneficial manure may be selected from the column of farm and artificial manures under question 6."

Professor Church, Royal Agricultural College, Cirencester, after analysing the replies and observing "they do not throw any startling light on the subject," derives from them these conclusions:—

"The fulfilment of the following conditions conduces to the health of the Potato and its resistance to the murrain:—

1. Good drainage.
2. A porous but fertile soil.
3. Free circulation of air above and within the soil.
4. The selection of sound and perfectly healthy tubers (not too small) for sets.
5. The choice of new and early varieties of the Potato.
6. Where the land is heavy and wet, planting the sets on, and not below, the general level.
7. The use of artificial manures, such as kainite, nitrate of soda, and superphosphate, with small quantities only of farmyard manure, upon wet lands rich in organic matter.
8. The free use of ashes, including burnt earth, leaves, weeds, &c.
9. Earthing-up, so as to spread out rather than crowd the haulms together.
10. Removing the haulms entirely if diseased badly, then sowing soot and lime, &c., broadcast. If rain does not follow, then rolling the field."

Dr. Hooker briefly replies—

"I cannot say that I can glean any definite practical conclusions from the replies which are likely to be useful to farmers."

"It cannot be doubted, after the study the subject has received both here and upon the Continent, that the disease is due to the attack of a microscopic fungus, the development of which is greatly facilitated by warm wet weather, such as we had last year (1872).

"The conclusion at which you arrive at the end of paragraph 17, appears to me to indicate the most reasonable chance of escaping the consequences of this scourge for the future. If we could get new kinds of Potatoes which would ripen not later than the beginning of July we should be safe."

Mr. Smith's is a very small pamphlet. He does not think the fungus, *Peronospora infestans*, constitutes the disease, but

is its consequence, and his suggested practice to avoid its occurrence is—

"Planting the Potato whole in light, loamy, and, if possible, in sandy soils in situations which permit of being properly drained; and also in not allowing the Potatoes to remain in the soil even for one day beyond the time necessary to complete their full growth. So long as Potatoes are planted year after year in the same soil, so year after year will the disease be reproduced; and so long as Potatoes are grown in heavy, and especially in clayey soils without due regard to drainage, so long will the Potato disease flourish in spite of all attempts at its extinction. Incidentally a clerical friend informed me that on one occasion his father grew Potatoes on raised ridges, and planted Cabbage in the trenches formed by throwing-up the ridges, with the most remarkable success, both in case of Potatoes and Cabbages; the latter, requiring more wet than the former, drained the superfluity from them, and hence the result."

THE SALE OF THE MANLEY HALL COLLECTION.

We some time ago stated that the celebrated collection of Mr. Sam Mendel, of Manley Hall, Stretdorf, near Manchester, was to come under the auctioneer's hammer; and accordingly it was disposed of by Messrs. Capes & Dunn, between the 7th and 17th of April. A detailed account of this princely collection of Orchids and Ferns, as well as of all that is beautiful and rare among plants, was given by Mr. Wills in the 15th, 16th, and 17th volumes of our new series; and in proof that the extraordinary riches of the place were not overstated, we will just add that the amount realised by the Orchids alone was £4,361 10s., while the Palms and other plants brought £1,225 1s. 6d. The following are some of the highest prices realised:—

Orchids.—*Aërides Schröderi*, £13 10s., Rollisson; *Cypripedium Stonei*, fine specimen, 134 gs., Williams; *Dendrobium nobile caulescens*, 19 gs., Marquis of Westminster; *Odontoglossum Phalenopsis*, fine plant, £11 10s., Broome; *Odontoglossum Phalenopsis*, fine plant, 14 gs., Wright; *Miltonia Morehana*, fine plant, 12 gs., Berrie; *Cattleya Pinellii grandiflora*, 10 gs., Veitch and Sons; *Oncidium concolor*, very rare, 18 gs., Bockett; *Vanda teres*, fine plant, £20; Dr. Ainsworth; *Aërides quinquevenerum*, splendid specimen, 10 gs., W. Agnew; *Vanda suavis*, very fine specimen, £11, Morris; *Aërides Veitchii*, splendid plant, 19 gs., Carden; *Aërides nobile*, splendid specimen, £11, Dr. Ainsworth; *Aërides Lobbi*, very fine variety, £10, Cross; *Vanda insignis*, true, fine plant of this rare species, 14 gs., Lord Londesborough; *Aërides Schröderi*, good plant, 20½ gs., Gaskell; *Cypripedium Dayanum*, very fine plant, rare, £17, Carden; *Masdevallia Veitchii*, very strong, £16, Berrie; *Sophranitis grandiflora*, grand plant, 13 gs., W. Agnew; *Vanda Lowii*, fine specimen, 17 gs., Lord Londesborough; *Masdevallia species* (large yellow flowers), *Sophranitis grandiflora*, and *Odontoglossum falcipetalum*, 10 gs., Gaskell; *Celogyne cristata*, specimen plant, £16, W. Agnew; *Lycaste Skinneri alba*, £16, Veitch and Sons; *Pleione lagenaria*, good mass, 10 gs., Agnew; *Dendrobium Falconeri*, grand specimen, 32 gs., Gaskell; *Dendrobium Wardianum*, grand specimen, 28 gs., Agnew; *Cattleya exoniensis*, fine plant, 26 gs., Berrie; *Dendrobium Devonianum*, grand specimen, 121 gs., Gaskell; *Dendrobium McCarthyi*, fine plant, £12, Williams; *Masdevallia Lindenii*, strong, £39, Berrie; *Oncidium splendidum*, rare, 41 gs., Williams; *Cattleya labiata*, very strong, 14 gs., Gaskell; *Phalenopsis Luddemania*, 11½ gs., Agnew; *Epidendrum prismatocarpum*, grand specimen, free-flowering, 27 gs., Broome; *Cymbidium eburneum*, good plant, 15 gs., Gaskell; *Dendrobium crassinode*, grand specimen, 13 gs., Gaskell; *Lælia purpurata*, fine specimen, 28 gs., Carden; *Lælia elegans*, grand specimen, 13 gs., Veitch & Sons; *Cypripedium Stonei*, fine specimen, 13 gs., Bockett; *Epidendrum vitellium majus*, superb variety, 13½ gs., Williams; *Cypripedium lævigatum*, 10½ gs., Williams; *Sophranitis grandiflora*, grand plant, 10½ gs., Hurst; *Dendrobium Wardianum*, fine plant, 11 gs., Carden; *Lælia cinnabarina*, specimen plant, 17 gs., Dr. Ainsworth; *Aërides affine superbum*, 10 gs., Williams; *Phaius Bensonae*, grand plant, 12 gs., O. O. Wrigley; *Cattleya Mendelii*, fine plant, very distinct, 34 gs., Morris; *Odontoglossum Phalenopsis*, very strong, 11 gs., Bockett; *Angræcum sesquipedale superbum* (the flowers of this plant measure 9 inches across), 16 gs., Rev. J. B. Norman; *Aërides Fieldingii*, splendid plant, 16½ gs., O. O. Wrigley; *Masdevallia tovarensis*, strong, £14, Williams; *Dendrobium filiforme*, very fine specimen, 15 gs., Rollisson; *Lælia anceps Dawsoni*, nice plant, 10 gs., Berrie; *Aërides Williamsii*, 11 gs., Rollisson; *Saccolabium guttatum superbum*, grand specimen, £16, Dr. Ainsworth; *Cypripedium Dayanum*, rare, 10 gs., Broome; *Cypripedium Stonei*, superb plant, 36 gs., Cross; *Celogyne cristata*, specimen plant, £18, Rev. J. B. Norman; *Odontoglossum Phalenopsis*, fine specimen, £12, Cross; *Aërides Dayanum*, large specimen, 16 gs.,

Goodall; *Aërides Veitchii*, fine plant, two breaks, 23 gs., Berrie; *Aërides Schröderi*, splendid specimen, 23 gs., Crosse; *Cymbidium eburneum*, grand plant, showing seven spikes, Day's variety, 57 gs., Williams; *Aërides Fieldingii*, 15 gs., Morris; *Aërides Fieldingii*, 11½ gs., Earl of Stamford; *Dendrobium Schröderi*, 13 gs., Cross; *Epidendrum prismatocarpum*, £7, Lord Londesborough; *Miltonia cuneata*, 12½ gs., Earl of Stamford; *Cattleya labiata*, fine plant, 10½ gs., Berrie; *Angræcum sesquipedale*, fine variety, 11½ gs., Cross; *Angræcum sesquipedale*, grand plant, 14 gs., Broome; *Cymbidium Mastersii*, 12 gs., B. Hume; *Cypripedium Lowii*, very fine plant, £16 10s., Cross; *Aërides affine superbum*, 17 gs., Bockett; *Saccolabium ampullaceum*, very fine specimen and variety, 21 gs., O. O. Wrigley; *Cypripedium hirsutissimum*, fine plant, 12 gs., Cross; *Maxillaria luteo-alba*, fine specimen, £14, Earl of Stamford; *Dendrobium chrysotis*, £12, Shaw; *Odontoglossum Phalenopsis*, fine plant, £11 10s., Earl of Stamford.

Palms and Miscellaneous Plants.—*Cocos Weddelliana*, 42 gs., Tattersall; *Cocos Weddelliana*, grand specimen, £60, Cole and Sons; *Geonoma Seemannii*, fine specimen, 31 gs., Tattersall; *Anthurium Scherzerianum*, £11, Williams; *Anthurium Scherzerianum*, grand specimen, 42 gs., Cole & Sons; *Gleichenia Mendelii*, 27 gs., Tattersall; *Gleichenia flabellata*, grand specimen, 38 gs., Kaye; *Gleichenia hecistophylla*, 23 gs., Carden; *Adiantum farleyense*, grand plant, 16 gs., Backhouse; *Anthurium Scherzerianum*, grand specimen, £36, Carden; *Trichomanes Luschianthium*, very rare, £16, Stewart; *Gleichenia Mendelii*, very rare and beautiful, £31 10s., Shuttleworth; *Acrophyllum venosum*, 2 feet 9 inches by 3 feet 9 inches, 13 gs., Williams; *Erica Massoni major*, 3 feet by 3 feet, 15½ gs., Stewart; *Acrophyllum venosum*, 3 feet by 4 feet, 11 gs., Jackson & Son; *Rhododendron Gibsoni*, 5 feet by 3 feet 6 inches, 10 gs., Haigh; *Acrophyllum venosum*, 3 feet by 4 feet, 15 gs., Cooper; *Nepenthes sanguinea*, grand plant, £50, Veitch & Sons.

EXTRACTS FROM DR. R. SCHOMBURGK'S REPORT ON THE ADELAIDE BOTANIC GARDEN AND GOVERNMENT PLANTATIONS, 1872.

It becomes more evident every year that this establishment promotes the advancement and taste for horticulture in South Australia; and I cannot omit repeating again in this year's report the great advantage which this State horticultural establishment affords in promoting such a taste. The number of persons who now frequent the garden for instruction or study, or who come to see what they have not, to compare and get the botanical names of what they have, and so derive a certain amount of knowledge, with the pleasure of seeing, I may say, a permanent flower show in our green and stove houses, are increasing every year. The number of our amateur florists is also steadily increasing, which is proved by our annual flower shows, where the number of fresh exhibitors is observable. These shows testify also the improvement in the culture of the plants.

Since the last few years an increasing taste for floriculture is also visible amongst the working classes, and at our shows, under the class of cottagers, we notice specimen plants which exhibit the care and judgment spent on their cultivation, so that even nurserymen may take a lesson from them.

Another proof that horticulture is much appreciated is the many tasteful cottage gardens which are now seen, not alone in town, but in its environs, and this progress is only since a few years visible.

Since the publication of the catalogue of the plants cultivated in the garden, 1871, in which 6000 species were enumerated, exclusive of the florists' flowers, 1479 species have been added to the collection, comprising most eminently valuable and rare plants, not alone of an ornamental, but commercial and medical value, which undoubtedly will benefit this colony in the future.

We never before received the plants in such good condition from abroad as during the last year, which may be accounted for—the plants from Europe having come mostly per the monthly mail steamer. The quick passage of these vessels secured the safe arrival of nearly all the plants, so much so that, in some of the consignments, only four or six of the plants had been lost, and, in consignments per sailing vessels, only so many plants were alive.

In the islands of Mauritius, Jamaica, and the Azores, where the forests have been wantonly cut down, so that some parts of those islands are now totally denuded of trees, the results are felt most alarmingly. The rain has become less every year; springs and rivulets, which before ran uninterruptedly, have ceased to flow. The respective Governments of those islands, convinced of the injury done to the country, have taken steps to replant the forests; in Mauritius, especially, the replanting has begun in full earnest.

If in tropical countries the influence of forests on the climate is so apparent, how much more must it affect a dry climate like South Australia?

Amongst the important introduction of seeds which may become staple articles stands foremost, the Esparto Grass (*Macrocloa tenacissima*, Kuth.; (*Stipa tenacissima*, Lin.) a native of Spain, Portugal, Greece, and North Africa. It has gained during the last few years a great mercantile reputation in regard to its valuable fibre, not alone for the manufacture of ropes and other articles, but as contributing also an excellent material for the best writing paper, without any other admixture, and thus, from the great use now made of it by the paper makers, it has become an essential article of import into England and other countries, and a source of wealth to the countries producing it. The import in 1871 into England alone is considered about 140,000 tons, and that of Esparto Grass ropes, and other articles manufactured from it, about 19,000 tons.

Notwithstanding this large importation of the raw material for paper-making, and that the paper-makers use of late a good many other substances for paper-making not used before, the scarcity of material becomes more evident every day, and the consequence is the constant rise in the price of the paper.

The value of dry Esparto Grass is about £5 to £5 10s. per ton; and it is said that, under favourable circumstances, as much as from 6 to 8 tons can be obtained from an acre. It grows on the poorest soil, especially limestone or sand; in fact, where the soil will produce no other vegetation the Esparto Grass will grow. It grows even in the sands of the Sahara, on stony hills, and on the very brink of the coast.

I have not the slightest doubt that the Grass will thrive with us, and that the many thousands of acres of arid land, of a limestone or sandy nature, we possess in the different parts of the colony scarcely fit for pasture, by sowing with Esparto Grass may become useful. Considering the similarity of our climate with that of Spain, and, in fact, the north of Africa, I am sure we have nothing to fear that our droughts would affect its growth—and how its introduction would benefit South Australia if our deserts could be changed into productive districts!

It is now most extensively planted in the south of France; and it is said, that no other crop will pay better, so much the more considering that it will grow on the poorest soils. It is propagated by seeds, and also by dividing the roots.

The celebrated Bunch Grass of British Columbia (*Elymus condensatus*, Presl.), of which I received last year a few seeds from Mr. Anderson-Henry, of Edinburgh, and raised a few plants, seems to do well with us. The merits of the Bunch Grass, both as an early forage, and abundantly productive Hay Grass, have secured for it a highly prominent place among the cultivated agricultural plants of England.

"In cultivating the Bunch Grass, it is recommended to sow it in drills or beds, allowing it to grow there for at least one season, and then transplanting it to well-cleaned land at a distance of 12 or 15 inches apart. The seedlings are of little growth, and never bear seed the first season. It will be requisite throughout the first summer, after transplanting it, to keep it free from weeds, but afterwards the plants will be sufficiently strong to overpower most kinds of weeds, and they will seemingly grow on in full vigour for a long series of years, and, it is said, will grow in good soils 6 to 8 feet high."

I was also successful in introducing the seed of another plant, which supplies the material of a not unimportant article—viz., American brooms, which are so largely imported, and for which we send a large sum of money away, which could be retained in the colony, as there is not the slightest doubt that the millet will grow just as well with us as the *Sorghum saccharatum* does, and the skill of manufacturing the brooms might soon be obtained.

There is no doubt that the Millet will grow with us, especially in the hills, and southern districts. It should be sown in the latter end of August, but rather thin, so that the plants grow vigorous, and produce a greater development of the inflorescence, which part is used for the manufacture of the broom.

This industry has already been introduced in Victoria and New South Wales; and, in the latter colony, especially in Newcastle, the brooms are largely manufactured, and already exported to South Australia. The Newcastle brooms are an imitation of the American, but do not look so good, which cannot be expected in the short time this new branch of industry has been started.

Another plant which might be cultivated with profit, and which forms at present a not unimportant article of export in Brazil and East India, is the Ground or Earth Nut (*Arachis hypogaea*, Lin.) It was shown the first time at the Agricultural and Horticultural Society's Show last February, grown by that indefatigable colonist, R. Ross, Esq., Highercombe.

I received a quantity of seed last year from New Zealand, and considering the lateness of the season when planted, it has done uncommonly well. The seeds are not alone eaten in a roasted state, but also a palatable oil is made from them.

The plant is an annual, but very productive; it grows well in sandy soil, and the acre produces from thirty to forty-five bushels. I am able to distribute some of the seeds.

The true Opium Poppy seed (*Papaver somniferum*, Lin.), can also be obtained from the garden. It is a wonder that no en-

deavour is made to manufacture opium here. South Australia, so far as climate and soil are concerned, offers no difficulty to the cultivation of the Poppy, and probably we could produce a good sample of the drug. Mr. G. Francis exhibited at one of the February shows, not long ago, a sample prepared by him, which was considered as fair a sample as could be derived from the first experiment. Consider the enormous sum which is yearly expended in opium—I will only mention Victoria, where, according to the custom returns in 1871, opium to the amount of £94,451 was introduced. The cultivation and manufacture can be undertaken by young people; and, as the return of the Poppy culture, whether for oil or opium, is within a few months, this renders it highly desirable that an attempt should be made for the cultivation of the Poppy.

Amongst the new medical plants introduced last year, stands foremost the famous Mikania Guaco (Humb. & Bonpl.), so highly spoken of by Baron Humboldt as a sure cure for snake bites from the most poisonous kinds. During my travels in South America, this plant was spoken of everywhere as an infallible remedy. I myself had no opportunity of testing its effects, although we were so unfortunate as to lose two of our men from snake bites, not having the herb with us, which is only found growing on the banks of rivers.

For a long time the knowledge of the antidotal qualities of the guaco remained a great mystery, and was confined to a few native inhabitants of South America. However, the medical qualities of the guaco are now generally known in all countries where it is found. That part of the plant which is used for the snake-bite is the sap or tea distilled from its leaves. The frequent accidents and loss of life occurring from snake bites in Australia, especially during the last few years, induced me to introduce this valuable plant.

Notwithstanding that Professor Halford's method (injecting ammonia into the wound) is highly spoken of, and has, indeed, already saved many lives, we should try also the Mikania. True, as a tropical plant, I fear it is not easy to acclimatise (at least, out of doors) in South Australia, but may thrive in more genial parts of Australia—viz., New South Wales and Queensland. I have the imported plant propagated; and, when the young plants are strong enough I will send some to Professor Halford, in Melbourne, to test the nature of the plants.

The manufacture of scents and essences is one of the most important. If we consider that British India and Europe consume annually about 150,000 gallons of handkerchief perfume alone, and that the revenue from imported perfumes in England is estimated at about £50,000, we may judge of the immense quantity of material used for perfumes. Most of the flowers which provide the material for perfumes grow luxuriantly with us—viz., Jasmine, Mignonette, Verbena, Rose, Lavender, Acacia Farnesiana, Heliotrope, Rosemary, Peppermint, Violets, Oranges, &c. I may say these plants thrive, probably, in greater perfection here than in any part of the world. No doubt South Australia should be a perfume-producing country, as we see here flourishing some of the most valuable scent plants.

In proof of the value of perfumes to the countries, it may be stated that one acre of Jasmine will produce flowers to the value of £250 annually; Rose trees, £75; Orange trees, £50; Violets, £160; Cassia trees (*Acacia Farnesiana*), £90; Geranium plants (*Pelargonium odoratissimum*), £200; Lavender, £30, &c.

BELGIAN HORTICULTURE.—No. 4.

M. LINDEN'S (GLONER'S) GHENT.

In the "Autobiography of a Cornish Rector" is described an Oxford sermon by Dr. Tatham. The doctor, who is combating some notions of German theologians, is made to say that "if I had my will *jarman* theology, and *jarman* philosophy, and *jarman* metaphysics, should all be buried together in the depths of the *jarman* ocean." The italics are the author's. But what has this to do with the present subject? Nothing; only it instances in emphatic language where most of my Belgian notes have gone, and here is the promised reason why I must omit many names and details of what might have been of some public interest, and I must in future rely almost solely on my powers of memory in an attempt to reproduce something which presented itself last September during a six-days sojourn on Belgian soil. On the passage home the good ship "Leeds" was caught in the first brunt of the equinoctial gales, which raged with more than their wonted fury, and forced themselves into my berth and my pockets, and reconvered everything in the way of paper into its normal pulp. Much, therefore, that was intended for THE JOURNAL OF HORTICULTURE found its destiny in the German Ocean. As to myself and hale old companion, being of harder material, the greater portion of us arrived safe on shore, and I presented him to his young wife, certainly a lesser, and, perhaps, a better man. My loss was mostly pencil and paper; his, on his own calculation, averaged 2 lbs. per hour of himself during the

twelve hours the storm lasted; but even then, putting the young wife into the scale—as the trio would force a quarter of a ton weight to kick the beam, and a little more—the loss was of not much value, and he wishes me to tell the world that “Waterloo was worth it all.”

On leaving the establishment of M. Linden, Brussels, I would advise all visitors to step over the way and inspect the Musée Wiertz, and after admiring a feast of much that is rich and rare in Nature's works, they may, perhaps, be astonished at the wonderful examples of art which adorn its walls. It is only two minutes' walk from M. Linden's, and is free to all. For extravagant conception and marvellous execution many of the specimens here have surely no parallel. This extraordinary collection spoiled me for looking at pictures. It may not, however, have the same effect on better judges, and I proceed to inspect what I am a little more competent to speak about—viz., M. Linden's nursery in the Rue du Chaume, Ghent, in charge of his able kinsman, M. Gloner.

From Brussels to Ghent, *via* Alost, is not more than an hour and half by train. The line is bounded by remarkably trim fences, and the country traversed is principally pasture, and is well, perhaps too well, wooded. The arable portion of land is divided into small fields, and evidently better cultivated than is the case south of the former city. The grass land is devoted to beast-grazing, the country being too damp for sheep, of which we saw only one flock in our whole tour. These were lean, long-tailed, foxy-looking specimens, requiring two looks to satisfactorily determine whether there was a dog in charge, and which was the dog. Arriving at the old Flemish city I found it very unlike Brussels, and I felt at once that I had left a holiday city of pleasure and reached an industrial centre.

Ghent is a mixture of the ancient and modern. The streets are wide, the squares spacious, and the bridges numerous. From its size, and turnings and twistings innumerable, a stranger will have no difficulty in losing himself, and without a guide may wander in idiotic bewilderment to find what he wishes. A very able, and withal a very kind guide, Mr. Van Houtte, jun., ushered me into the portals of Linden's, late M. Ambroise Verschaffelt's, seat of business just as night was creeping on, and instead of spending a day I could only give an hour to see and miss seeing the profusion of treasures here located. When we look at this, in conjunction with the Brussels collection of plants, we have no longer need to wonder at M. Linden's prominence as an horticulturist, or to be for a moment surprised at the high honours he has won. At Brussels would seem to be nursed-up the new-born gems, and the ever-arriving importations, while at Ghent they are increased and matured to the magnificent proportions that under skilled management they are capable of assuming. Not many establishments, and especially in the matter of Palms, can present such a scene of tropical luxuriance as flourishes in the very acme of health and beauty as is here seen under M. Gloner's care. A collection of Palms in exuberant health, and of the varied conformations pertaining to the genus, has a charm of its own, which forces itself on one's attention, extorting admiration from even the most casual and unprofessional visitor. They are a class which must and will find their way into every stately home in this country, and will eventually adorn the bondoirs of English towns and cities in the same manner as on the Continent. Ferns must yield to them, as being too delicate and fragile for climatic vicissitudes; and gay-flowering plants, by their transient charms and frequent unsuitableness under adverse influences of insufficient light, insects, and the dust which apartments of urban *locale* ever afford, must stand aside and make room for a few easy, elegant, interesting Palms.

Palms are attractive in every stage of growth. If proof is wanted of the infantile elegance of such things as *Glaziova insignis*, *Verschaffeltia splendida* and *melanochætes*, and the refined grace of *Cocos*, especially *C. Weddelliana*—these, with others, not omitting the useful table Palm *Thrinax elegans*, are here, in the aggregate, represented by—yes, thousands, and speak for themselves. If we look for perfected forms we find, besides fine specimens of the above, *Latantias* (with *Cibotiums* 20 feet across), towering *Coryphas*, *Arceas*, and *Stevensonias*, majestic *Zamias*, *Ceroxytons*, and *Chamarops*, and striking *Jubeas*, *Welfias*, and *Kentias*, and a hundred others worthy of note, but less indelibly photographed on the memory. But sufficient is said to indicate the riches in this order of plants at M. Linden's celebrated Ghent establishment; and yet this is only one place amongst others having extraordinary collec-

tions. In the matter of Orchids and other things the English are distinctly a-head of the Belgians, but in Palms they leave us far behind. This is their speciality.

This place, however, is strong in other good things. Amongst Aroids we find the distinct and beautiful *Phyllotanium Lindenii* in fine form, telling examples of *Dieffenbachia latimaculata*, and another new and good plant, *Curmeria picturata*. *Dracenas* are in strong force; *gloriosa*, *lutescens*, *Gaillfoylei*, &c., showing to advantage amongst their compeers. *Marantas* in great variety are growing with a vigour common to Cabbages, the new one, *hieroglyphica*, compelling a lingering glance; but there are others, if less rare, not much less beautiful.

Outside the houses there was less to note. *Azaleas* and *Camelias* were in good force, and planted or plunged in a bed in the open air was a fine stock of the Abyssinian Banana, *Musa Ensete*. A pair of very large specimens of *Phormium tenax* stand like sentinels at the entrance, but outside show is here, as in other places, evidently little aimed at. The place is an enclosure of glass, containing about thirty-six houses of large dimensions, and everything inside denotes skilful management. Mr. Gloner's courtesy adds to the pleasure of a visit, and an inspection of his charge cannot but be enjoyable to any wandering horticulturist.—J. WRIGHT.

A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 8.

MASDEVALLIA.

In this genus we have several gorgeous-flowered species, plants that are extremely popular; indeed they are the Orchids



Masdevallia Veitchiana.
(Bot. Mag.)

of the present time. *Masdevallias* have been frequently introduced, but seldom reached this country in a living state,

and should life still have been left when arriving, the life was always starved out of them in a few short weeks. Many times have I heard that plants of this genus were difficult to rear; so would anything be, so should we be ourselves if we were compelled to live in a Turkish bath or an oven. Since, however, we have come to understand the natural positions and surroundings of these beautiful unorchid-like Orchids they have proved themselves both quick and free in growth and profuse in flowering. The soil we have recommended suits *Masdevallias* admirably. Keep the sphagnum growing around them, and never allow them to become dry summer or winter, though during the winter days water will necessarily have to be used with more caution.

M. VEITCHIANA.—The stem-like pseudo-bulbs of this species attain a height of about 8 inches, bearing a thick, fleshy, dark-green leaf. The scape bears a large solitary flower of a peculiar shape, measuring about 6 inches across; the three sepals are ovate in shape, and lengthened out into tail-like points, but the lip and petals are quite small and hidden by the sepals. The prevailing colour is vivid orange scarlet, through which runs a beautiful shade of yellow and purple, resembling shot-silk. It blooms both early in summer and in autumn, and should be grown by all lovers of Orchids. Its home is in the mountain regions of Peru.

M. LINDENI.—Truly this is a gem of gems. In general appearance the plant resembles the previously-named kind, and, like it, the flowers are solitary, and the dorsal sepal is erect; the colour is a rich violet rose or brilliant magenta, a shade which is so rare and conspicuous as to attract the attention of all beholders. This species does not produce such large flowers as the other kinds, but it is perhaps more chastely beautiful than any. Native of New Grenada.—**EXPERTE CREDE.**

NOTES AND GLEANINGS.

DR. F. ARNOLD LEES and **MR. T. B. BLOW** propose to form a club under the name of the **BOTANICAL LOCALITY RECORD CLUB**, the object of which shall be to collect and keep a record of the exact localities of all the rarer British plants, with the dates of the latest observance of each, to be published yearly at the end of each season. The yearly report, containing not only a detailed list of the localities, but also a geographical summary of each year's work, is to be published and distributed only to members of the club, and to certain learned societies; to the former a subscription of 5s. will be charged. The names of botanists desiring to become members are to be forwarded to **MR. T. B. BLOW**, Welwyn, Hertfordshire.—(*Nature*.)

—The supporters of the **WIMBLEDON HORTICULTURAL AND COTTAGE GARDEN SOCIETY** are energetic and liberal. There are thirteen special prizes offered by private individuals, and they include collections of plants; table-decoration flowers; Pelargoniums; Grasses; buttonhole bouquets; arrangement of flowers; cut Roses, Pansies, Pinks, and Carnations, and lastly (added since the schedule was printed) "A Silver Medal for thirty-four blooms of cut Roses, distinct; open to all comers."

—**MESSRS. E. G. HENDERSON & SON**, of Wellington Road Nursery, have published a coloured plate of the novelties for the flower garden they intend sending out this season. The subjects figured are *Sedum acre* elegans, *Lobelia Mazarine* Gem, *Alternanthera amœna* spectabilis, *Alternanthera paronychioides* major, *Cineraria ceratophylla*, and *Golden Fleece* Thyme.

—**SALE OF ORCHIDS.**—On the 17th ult., **MR. J. C. STEVENS** sold by auction at his Rooms, King Street, Covent Garden, 588 lots of New Grenada and East Indian Orchids, &c.; the gross sum realised was £823. Among the lots were *Masdevallia elephanticeps*, £6 12s. 6d. The *Utricularia montana* was sold in lots of six and twelve, they realised about 6s. per plant. **MR. STEVENS** had another auction of Orchids on the 24th, but these were from Burmah. There were 443 lots, and they sold for £889. *Dendrobium thysiflorum*, £13 and £8; *Vanda cœrulescens*, £9; were among the prices realised.

GARDENING FOR LADIES.—The following condensed system of gardening is recommended by a contemporary for the study of ladies:—"Make your bed in the morning; sew buttons on your husband's shirt; do not rake any grievances; protect the young and tender branches of your family; plant a smile

of good temper on your face; carefully root out all angry feelings, and expect a good crop of happiness."

WORK FOR THE WEEK.

KITCHEN GARDEN.

EMBRACE every opportunity of destroying weeds and insects. Clear away old Cabbage and Broccoli stumps as soon as done with, as they only harbour one of the greatest enemies of gardeners. It is a common but bad practice with some gardeners to cut away the weak as well as the strong shoots of *Asparagus* until cutting is altogether discontinued; it is weakening the roots unnecessarily, and therefore should not be persisted in. As the weather brings *Broccoli* forward, some of it should be pulled up before it is fully grown and laid in a cool place, so as to prolong the season. Where the soil is very hard between the autumn-planted *Cabbages*, it will greatly benefit the plants to dig between them, and after rain they should be again earthed-up. Dig up the soil surrounding *Cauliflowers* with a fork, and afterwards give them a good soaking with water, which must be repeated twice a-week during dry weather. All the *Celery* that is fresh pricked-out must be shaded and watered until it get good roothold. If it is required very early, put single plants into some small pots, and set them in a frame until they get roothold, when they may be fully exposed to the air, but must be kept well watered, or the plants will be liable to run before they attain any size. Where *Cucumbers* are grown on dung beds, the frame will want raising to allow the plants room and a sufficient depth of soil. Trenches should now be prepared for hand-glasses; they may be 2½ feet wide, and 1 foot below the surface; it should then be filled with prepared dung, leaves, and short grass 6 inches above the surface; prepared soil should be put beneath the glasses, and the rest of the dung may be covered with the soil that came out of the trenches. Give a few of the earliest *Lettuce* plants a good supply of water to bring them forward. Some of the *Cos* may be tied-up to cause them to form hearts. Keep a steady heat of from 55° to 60° where there are productive beds of *Mushrooms*; continue to form fresh ones for summer and autumn use. Sow both Long and Turnip-rooted Radishes; water those from which they are drawn for use.

FRUIT GARDEN.

Strawberries ripening their fruit may be placed in a frame where a free admission of air can be given. Wall trees must now be attended to, as their welfare depends in a great measure on their treatment at this season. As soon as insects make their appearance wash the trees with tobacco water, in which mix some sulphur, and apply it while the latter is in a state of suspension. Head-down young wall trees, this being the best season for the purpose.

FLOWER GARDEN.

The drying winds and the present clear weather have rendered it necessary to supply water to recently-transplanted trees, shrubs, vegetables, and also seedling crops which are just making their appearance, otherwise they had better be allowed to remain in a dormant state until we have rain, as continued watering binds the surface of the soil into a hard crust impenetrable by air, and is extremely prejudicial to the germination of seeds; this, however, may in some degree be prevented by shading from the sun or covering the soil, so as to prevent evaporation as much as possible; frequent waterings are not then necessary, and the soil is kept in an open porous state, which is of the utmost importance. When the nights are warm seeds and herbaceous plants of all kinds should be watered in the evening, so that the soil may gradually imbibe the water; but if cold nights prevail, the early part of the morning is the best time for its application. Trees and shrubs recently transplanted should be watered and immediately mulched with short litter, and rare and choice kinds should be shaded and occasionally sprinkled overhead with water in the morning. Some of the early-sown annuals will now require thinning-out, in doing which remove but five or six of the strongest plants, and those, if not very strong, may have the terminal leaf-bud removed to make them bushy. Stir the ground around the plants deeply with the hoe. Many of the herbaceous plants will now require a little training, and in regulating them do not bundle them up like so many peasticks, but tie the branches out separately as you would a prize Pelargonium. Attend to young growths on climbers before they get crowded, and remove any strong branches which are not likely to produce flowers. Auriculas are in most situations fully expanded, with the exception of the northern counties, where they are somewhat later. In order to preserve the bloom the pots must be removed to a cool place having a north aspect, and should be placed on a neat stage, "tier above tier," covered with an awning of calico, and regularly watered, they will retain their beauty for at least a fortnight or three weeks. The direct rays of the sun have a prejudicial effect on the colours, causing the dark or body colour to start or diffuse itself over the margin. Few spring flowers are

so beautiful, or more worthy of the trouble requisite to insure their perfection. Tulips are rapidly throwing up their blooms. In all probability we shall have some sharp frosts. The sticks had better be inserted now in the blooming pots of Carnations and Picotees, not only to support some varieties that have a tendency to spindle early, but, if delayed longer, pushing them down is apt to injure the roots. Keep the pots free from weeds. Dahlias are in many places already planted out; protect with pots at night. Snails will sometimes eat through the stems; a little chaff or soot spread on the surface of the soil will obstruct them in their ravages. It is the safest plan to plant in the first week of May. Examine Roses to see that the worm in the bud is not at work, and dress them, if necessary, with tobacco water and soap-suds to clear them of the aphid or green fly. Many of the strong-growing hybrid China and French varieties will be the better of having some of the strong growths thinned-out; indeed, no more branches should be left upon a Rose than can be properly exposed to the sun and air. Remove the strongest branches, which frequently run into water shoots; the middle-sized ones generally produce the finest flowers. In sheltered situations some plants for masses may be planted, such as Lobelias, Pentstemon gentianoides, Calceolarias, Verbenas, &c., and if frost should occur a few houghs may be laid over them or be stuck about the bed, which will now afford sufficient protection. Recently-planted Box and fresh-laid turf will require water in dry weather. Roll and mow the lawn, and roll the walks when somewhat moist.

GREENHOUSE AND CONSERVATORY.

The variable weather of April (so fully evidenced lately), its fitful gleams of sunshine and cold searching winds, render the task of sustaining an equable temperature oftentimes difficult. It must be remembered that the occupants of the greenhouse have, under the excitement of a genial temperature, developed their tender shoots; therefore, direct injury would ensue from neglecting the precaution of regulating air and sustaining suitable heat. Plants that are intended to be turned out against walls should be hardened by being placed in a cold pit, and all woody plants may be placed in the same situation if convenient, where they may remain the whole summer, and they will not be liable to the evil consequences arising from placing them where they are fully exposed to the sun. Give air freely to prevent the plants drawing.

STOVE.

Many of the plants will still require potting, and this will be the case more or less throughout the summer. Continue to propagate from choice plants, and keep all free from insects by the means so frequently alluded to.

PITS AND FRAMES.

Tuberose should now be potted if not done before. Pot-off rooted cuttings of Dahlias, and harden the early-potted ones; divide and pot the old roots. The plants are, of course, being removed from these structures to temporary protection as fast as possible. If they are not quite clean give them a good fumigating before they are taken out. Pot-off all recently-propagated plants, and see that you have sufficient stock of everything to plant your beds properly, if not, put in some more cuttings without delay, which will do admirably to fill up gaps in the summer.—W. KEANE.

DOINGS OF THE LAST WEEK.

The wind still continues to blow from the east, and the average night temperature for the week has been lower than last week. On Friday morning the thermometer registered 5° of frost, and on Saturday 4°. The ground is very dry on the surface, which is much in our favour. The earliest Potatoes under the shelter of an east wall have suffered a little. We threw some old shading material over a portion of them, and that part is fully as much damaged as that uncovered. Indeed, we never have done much good with any makeshift mode of protecting. Where any good effect is to be produced, the protecting material must be arranged in such a way that it will not touch the plants when it is on, and it must not be dragged over them when putting it on at night or in taking it off in the morning. More damage is sometimes done to fruit trees on walls by allowing the protecting material to flap against the trees than if they had not been protected at all. Protection is necessary in our uncertain climate, but it is best done by placing some stout poles in a leaning position against the wall at the distance of 12 feet apart. The protecting material should be bound round with some stout webbing. One side should be nailed to the wall just under the projecting coping; a short length of tape must be nailed on to the top of each pole to tie the material to when it is rolled up. It can readily be let down at night and rolled up in the morning. A man with a ladder will do all the walls in a moderate-sized garden in a few minutes. The under side of the material is nailed to the poles with a tack or wall nail, and fastened at each corner to the wall, so that when it is down it is quite tight.

The bedding plants in turf pits have not suffered in the least; they had been previously prepared when in the pits by having the glass lights taken quite off in the day. The shrubby Calceolarias in trenches, such as Celery is planted out in, are looking well; they have no protection whatever, but the plants are never coddled in any way. In fine weather the lights are drawn down every morning the first thing, and replaced the last thing at night, throughout the winter months.

KITCHEN GARDEN.

Sticking early Peas.—Last week we wrote about this. They are now a foot high, but the sparrows will not let them alone, and have seriously damaged our prospects of a crop. Some white threads have been run down and across the rows, but this will not deter them for any length of time. We must now get some netting and throw over them. The rows of Lettuce have been covered with the pea protectors; to-day one of them had been knocked off, the sparrows' quick eyes noticed it before we did, and very little of the leaves but the midribs was left. Our garden adjoins the farmyard, which accounts for the trouble we have with them.

Little has been done in the kitchen garden, except hoeing between the crops and weeding the walks: we like to have every weed destroyed early in the season. We also sowed the third crop of Peas, sixteen varieties, but so many are sown chiefly by way of proving the new ones. We think very highly of many of them, having had ample opportunity of comparing them with the old sorts at Chiswick last season. Some of the very latest we have not seen, but they were certificated by the Fruit Committee of the Royal Horticultural Society; and we have sufficient faith in that body to believe that they would not have had that honour passed upon them if they were not worthy of it; but we are never satisfied unless we have them proved in our own garden, as varieties first-class at Chiswick might not be so here, our soil is so different.

FLOWER GARDEN.

Here the lawn mower is kept at work, and all the edgings have been fresh cut with the turf-cutter and look very trim. The lawn is always cut very early in the season, as when the grass is left to grow too long before the first cutting, the lawn shows the effect of it all through the season. The Hyacinths in the flower beds are now over, but Tulips, Narcissus, Polyanthus, and Primroses are very gay; the latter are suffering from the continued drought, and have been twice watered. Roses have been looked over to destroy "the worm in the bud," we go to the work armed with a pin with which the rascals are picked out. We also sowed Mignonette and Sweet Peas.

PLANT HOUSES.

We continue to fumigate until all the green fly are destroyed. In one house the stage Pelargoniums are now coming into flower, and though not an aphid was visible on them, the house was thoroughly smoked. This is always done in the Pelargonium house just before the plants flower, as should green fly appear afterwards when the plants are in full bloom, to smoke the house then would cause all the petals to drop. We have also been looking over all plants in the stove for mealy bug. During the winter season we can generally keep this pest pretty well out of sight, but with the increased temperature in April they have made an appearance on the Stephanotis, Ixoras, and some other plants; they must be thoroughly cleansed with a sponge, soft soap, and rain water. Training climbers has occupied the rest of the time.

FRUIT AND FORCING HOUSES.

Tying-down the shoots of Vines in late houses; they are now growing vigorously and show well for fruit. The Melons in the early house are setting their fruit; the shoots trained to a trellis overhead have required training and thinning-out. We are always careful with the Melons to have as many female blossoms expanding at the same time as it is intended to allow on the plants for a crop, as should one or two fruit be set two or three days before the others the later-set fruit will not swell well. Constant attention has been given to airing, and much caution is required during such trying weather as we have had.—J. DOUGLAS.

TRADE CATALOGUE RECEIVED.

R. Read, 35, Regent Circus, Piccadilly, London.—*Catalogue of Garden Engines, Pumps, Syringes, &c.*

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

SEEDLING PRIMROSES (S.).—The dark is richly and the pale delicately coloured. They are superior to many of the numerous varieties.

PEAS EATEN BY SLUGS AND SPARROWS (Barnet).—To keep away the slugs sprinkle lime over the leaves and soil; to exclude the sparrows have small-meshed galvanised iron netting arched over the rows.

ROSES NOT THRIVING (Fanny Fern).—We will obtain the information you need, but after long neglect we are not surprised at some failures. The following extract is from a letter written by a lady who knows how to cultivate "the Queen of Flowers"—"Roses, as a rule, require more management and understanding than are often exercised to train them up and bring forth their beauties and gifts to advantage, just like human plants. Happily, like them too, they will sometimes thrive and be lovely, and give forth sweetness notwithstanding lack of special culture."

CUTTING ASPARAGUS (B. & W.).—Do not cut the small shoots or spruce; neither cut the fine shoots to a late period of the season. The stems and leaves of this year have to elaborate and store up materials for the next year's produce. This is so essential that we know of gardens where half the number of beds are entirely uncut from every alternate year, though manured as usual. The produce is strikingly improved in size and abundance by this practice.

AUCUBA AND RHODODENDRON LEAVES BROWNED (J. Booth).—The leaves of the "Variegated Laurel" (*Aucuba japonica*), and those of the *Rhododendron ponticum* are browned by the frosts we had in February. They will fall off, but the fresh growth will be healthy. Evergreens have been much injured by the frosts of February, the shoots having been unripe owing to the wet and cold of last year.

TRANSPLANTING LAURUSTINUS (I. N., Teignmouth).—November is not a bad time to transplant this, but we prefer October, and showery weather from the middle of March to the end of April. *Laurustinus*, as also many of the more tender kinds of evergreens are much injured by frost, and look very brown and dead; they will, however, recover with brighter weather.

HORSE CHESTNUT SEEDLING (Flora).—It should flower in ten or twelve years, but much depends on the locality and treatment of the tree. It ought to be a large tree in fourteen years, and will no doubt flower soon. We have known a Horse Chestnut be twenty years old before it flowered. We do not know what shrub of an evergreen character would thrive in your swamp, except Spruce, which is a tree. Hemlock Spruce would also thrive if the ground is not very wet. *Cornus mascula*, *C. mascula variegata*, *C. sanguinea*, *Viburnum Opulus*, *Deutzia scabra*, *Salix*, and *Alders* would do; but they are deciduous. The weed you sent us is an *Antennaria*, probably *A. dioica*. Your lawn is dry and poor. There is no remedy but to grub it up with a knife, and to pick out the creeping stems. The flower we cannot name, owing to its having reached us dried up.

PLANT UNDER ELM TREE (Cotford).—Periwinkle would grow, and give a green leafy covering. *Vinca minor* does even better than *V. major*. Ivy succeeds well under trees, and covers the ground more quickly than Periwinkles.

AZALEA REPOTTING (T. H. B.).—Azaleas will thrive if in repotting you do not use "turf"; but if by "turf" you mean peat, then we can only say it is essential for Azalea culture. Sandy peat three parts, and one part light fibrous loam, with one-sixth of silver sand form a good compost for Azaleas. Turfy light loam, and a fourth of old dry cowdung, will also grow them well.

WATERING PEAS WITH LIQUID MANURE (Old Subscriber, A. F.).—In dry hot weather liquid manure applied to Peas is desirable, pouring it along the sides of the rows, and not directly on the rows or base of the haulms, for if strong it destroys the crop. It should be weak, and applied along the sides of the rows, giving a good soaking once or twice a-week after the plants are showing for flower.

PEAR TREES UNFRUITFUL (Y. G.).—The past season, in fact the last two years have been very unfavourable for the ripening of the wood of out-door fruit trees; they have run much to wood. Your trees being vigorous we should root-prune them next autumn; the sooner it is done after the leaves fall the better. If the trees are only moderately vigorous, it is likely that with a fine summer and properly pinching the shoots it will not be necessary to root-prune.

PRUNING FIG TREE (Gardenia).—It was at one time a common saying, "that a pruned Fig tree never bears." It would not if the young wood was cut back in the same way as an Apple or Pear tree is pruned. All the pruning required is to remove superfluous old wood in the autumn after the fruit is gathered. If your tree is much crowded with wood, you may remove some of it now, but it must be done sparingly at this time.

CLIMBERS FOR ARBOUR (Idem).—Clematises of the Jackmanni type, or some of the climbing Roses, would be the best plants to cover your arbour. We grow a very pretty climbing Rose, Princess Louise.

SPRING FLOWERS UNDER TREES (Idem).—They succeed best under trees and amongst shrubs. You may plant the different varieties of the common Primrose, *Anemone nemorosa*, *Scilla non-scripta*, blue, white, and flesh-coloured; Lily of the Valley, Solomon's Seal, Snowdrops, Hyacinths, early Tulips, and the different species of Narcissus. Mix some leaf-mould or road scrapings with your clay soil; a dressing of lime would probably do it good.

PEACH APHIS (G. C.).—Yours seems to be a bad case. Dissolve 6 ozs. of soft soap and half a pint of tobacco liquor in two gallons of water, with which wash the young shoots. When the leaves are much curled it is of no use applying the wash with a syringe. The young shoots should be taken in the hand, and the liquid applied with a soft brush, drawing it upwards. You might winter-dress the trees with Gishurst compound, 12 ozs. to the gallon of water.

VINES FAILING (A Four-years' Subscriber).—Do you give your Vines enough water? If they are all right at the roots the shoots should not be so stunted. We have seen similar examples to those you send, and have had a few in our own garden; we attributed it to the unfavourable season of last year.

Give the Vines a good watering at the roots; follow in other respects the instructions given in the manuals you have, and we think the Vines will grow out of it. Of course the roots of the Vines were uncoiled and laid out in the borders when planted; neglecting to do this is sometimes a cause of failure.

SELF PANSIES (C. Stuart).—They are all good for clumps, especially *Blanche* and the *Claret*.

BOUGAINVILLEA SPECTABILIS (G. G.).—Your specimen of the flowers and their coloured bracts is very good, but gardeners have long since learned how to make it flower. That was not the case when the "Cottage Gardeners' Dictionary" was first published.

NAME OF FRUIT (W. Fowler).—Your Apple is the West Griestad Pippin.

NAMES OF PLANTS (M. P.).—The flower is *Orobancha minor*, Smaller Broom-rape. We cannot name plants from leaves only. (*W. H. Tillett*).—You did not number your specimens, so we could not refer to them. (*J. Bradbury*).—We cannot name varieties nor species from their leaves only. (*T. W. H.*).—*Amygdalus nana*, or dwarf Almond. It is a native of Russia, and introduced here in 1633. (*Elronge*).—Your shrub is *Cerasus japonica flore-pleno*, or Double-blossomed Japanese Cherry. It came to this country from China in 1810.

POULTRY, BEE, AND PIGEON CHRONICLE.

REFORM IN POULTRY EXHIBITIONS.

IN addition to the numerous suggestions that of late have appeared in the columns of the Journal as to improvements in the management of poultry exhibitions, allow me to add still another practice that perhaps needs revision even more than any yet noticed. I allude to the really objectionable feature of holding shows without any protection whatever from unfavourable weather, either as regards the birds themselves or the persons called upon to arbitrate. True it is that such shows are mostly held in summer, when, if the weather prove favourable, there is, perhaps, but little if anything of which to complain; but can any person predetermine what may be the weather at any fixed date in this truly variable climate? It has very frequently occurred that unexpected thunderstorms have taken place, drenching to the skin both the poultry shown and the arbitrators also, who may have been previously chosen to decide on the respective merits of the fowls entered. This I know that some years back I was confined to my bed for several weeks consecutively from the effects of such a thorough soaking. Again, Mr. Teebay, whose experience I know is quite in accordance with my own, was laid up for some months not long since owing to a similar wetting, so much so that, to use that gentleman's own words, "he scarcely hoped to recover."

Nor are thunderstorms the only danger from holding shows entirely open to the sky, thorough continued drizzling rain all day long is perhaps equally injurious in its consequences; and I have repeatedly judged with parties thus situated, when, after as we thought completing our duty, we found, to our utter astonishment, that the pencil awards in our judges' books were entirely obliterated or rendered barely distinguishable by the incessant downpour. Hundreds of valuable show birds have been irretrievably ruined from this cause alone, though sometimes in the case of the hardier varieties only after protracted suffering. Nor is this the only cause for fearing injury. Direct and unimpeded sunshine during the height of summer kills, or at least irreparably injures, the plumage equally with constant rain. Many of our oldest exhibitors will call to mind that the extraordinarily good Buff Cochins (the best bird of his day, and the winner of so many prizes), was entirely lost to his owner, Mr. Gueldard, of Aikrigg End, near Kendal, owing to the effects of sunstroke when exhibited at Anerley Show in 1856. His comb, wattles, and throat became a perfect damson colour, and despite of all remedial measures, "he died off by inches," to use the words of the experienced poultry-man who attended him. Nor was he the only one by many that, to my knowledge, were killed outright by the excessive heat of that day.

I think I may safely suggest, that calm deliberate arbitrations cannot fairly be expected from judges thus situated. I do not anticipate that this suggestion of having in all cases of field shows, tents for the protection of poultry and visitors will be adopted, for I know more than half a dozen committees who state, "That if they provided tents they could not continue their show, for the additional expense would bring them to a dead standstill." Although I am well aware I am treading on tender corns, I cannot but say, in my humble opinion, the sooner this takes place the better. Few but such parties as rear or purchase prize poultry know their actual value, or the positive difficulty of replacing them when thus injured; the only consolation, if such it can be called, usually offered to the annoyed owners by the secretaries of these shows when troubles have ensued is, "I assure you the committee are very sorry; it was their misfortune, not fault (?); your birds were treated the same as the others."

A certain remedy is in the hands of the exhibitors themselves if they will avail themselves of it—viz., never to exhibit at all where the poultry is shown entirely without shelter, and as invariably, where doubt exists, to inquire by letter whether tents will be provided, and if not decline at once exhibiting. Perhaps

now the ball is fairly set rolling, some of our poultry friends may be induced to give us, in print, their views and experiences on this really important subject.

Your talented correspondent, "SHROPSHIRE RECTOR," gives a very cogent hint to the judges as to the necessity of following the popular feature of the day, "by striking and leaving in the lurch such committees," as by negligence and delay abridge the time appointed for judging. No doubt the effect would be as conclusive as it is merited, but I am glad to say this shortcoming is far less frequent of late than heretofore. Another good cause for "a strike" among poultry judges, however, arises from the fact of non-payment of absolute out-of-pocket travelling expenses, even where the services were as gratuitously as willingly rendered, under the specious excuse their funds were entirely exhausted, or the secretary had "bolted," and such-like apologies for not paying what honour and justice alike demanded. Several cases of pounds expended in such journeys I can easily recall to mind, as can also one of my general colleagues. We know the County Court is most likely a sufficient cure, though another was hinted to me lately by an experienced hand, when he said, "I never will go away now till they give me my money, but dodge about until they pay me." It is at best an unpleasant way of reinstatement of out-of-pocket railway expenses, and certainly suggests "a strike."—EDWARD HEWITT.

EXHIBITORS AT POULTRY SHOWS.

So much has been written of late about the discouragement given to amateurs at our shows, that previous to reading a grumble in your issue of the 10th ult. signed "Pickwick," I had almost begun to think that there was something in the management of our shows that demanded alteration, but the run of thought which, though mostly skillfully concealed in the context, can so easily be read between the lines of many of the grumblers' letters was openly avowed by "Pickwick," with a frankness that does him credit. The grievance of which he so bitterly complains is simply this, if a man's means will admit only second or third-class birds into his loft, the prize lists ought to be so arranged that with them he may secure first prizes.

Mr. A. is a man with ample means for fancies and indulgencies; he decides to keep birds, say Carriers; he knows the value of the old saying, that "like begets like," and therefore determines to lay a good foundation to his loft by commencing with birds of unquestionable reputation. Innumerable ways are open to such a man, so armed, to secure his ends; without trusting too much to the human nature of either dealer or breeder he resorts to the leading shows and claims the best birds, or he goes to the lofts of renowned breeders and buys there. To such an one, with a fair knowledge of the laws of breeding and general habits and requirements of the birds, success in some degree is certain, and if he be inclined to exhibit he will not be frightened from so doing, because a dealer's bird may be in the next competing pen to his, in fact, the dealer can only heat with birds bought from his or similar lofts, and we cannot sell the pie and eat it too.

Mr. B. is a poor man with an available sum of cash not exceeding £10, he catches the "Pigeon fever," and though without any practical experience decides to invest his capital in "the fancy," with what results everyone who has bought good birds must know. I do not wish to imply that £10 will be insufficient to lay the foundation of a good loft, but the process of expansion from such a beginning would require too much patience for nine-tenths of our amateurs. They want a shorter cut, floundering in which ninety-nine out of a hundred find themselves in the hopeless position of "Pickwick." Acting upon the idea of getting as much for money as possible, cheered with the hope of suddenly becoming "wholesale prizetakers," they buy with the said £10 several pairs of different varieties, always carefully extracting from the seller the remark that they are either "prize birds or prize bred," fortified with which assurance they rush to enter their birds at the next show. The disastrous effects of this investment prompts them to find solace in attacking not only the show committee but the most successful exhibitors.

Now, I ask, have such persons any real grievance? Are not the majority of the grumblers such-like fanciers? They build upon the sand, but blame others for the collapse, it is, in short, inexperience and want of capital complaining that experience and capital heat them.

To remedy this "Pickwick," "Miles," and Co., propose to banish the results of experience and capital from our shows, which would be simply carrying out the ironical suggestion of "SAPIENTISSIMUS"—viz., that our shows be conducted upon the donkey-racing system, by awarding the prizes to the worst birds. It may, and undoubtedly frequently does, seem hard to such-like amateurs that they should buy so many prize birds, and yet never succeed in netting anything better than "commendations" with which to furnish the loft, but there are two ways to reverse such a hardship, the first is the one with which "P. M., and Co." try to accomplish the reformation—viz., to induce show committees to adopt a set of rules, that will necessarily exclude first-class birds. "Miles" argues that such birds ought to

be found at shows where the prices are limited to £10, but that argument is quickly disposed of by the well-known fact that they won't be there, as proved at Dublin; and is it desirable they should? If the prices of rare specimens which cost the breeder so much patience and perseverance are to be "levelled down" to those of birds that can be bred in grossness by the greatest novice, will not one great goad to perseverance be withdrawn from the breeder? and will not the quality deteriorate? Remarkable birds cannot be bred every year, even by those who can afford to recruit their breeding studs in the expensive way Capt. Heaton has done his this season. Can it then be expected that that which cost so much will be freely offered at our shows for so small a sum? and if not, will not the primary object of shows be annulled by excluding them?

But supposing this novel method of "levelling down" become an accomplished fact, will "Pickwick," "Miles," and Co.'s, grievance vanish into thin air? If all amateurs could afford to give £10 for a bird, all could not have a Palace or Birmingham cup bird, and those that had would avail themselves at the reduced risks to extend their operations as "wholesale prizetakers," and still there would remain as now those who never get beyond a commendation to complain that those who have better birds receive the prizes. This remedy, then, I agree is undesirable, though it would undoubtedly accomplish the end for which so many write in your Journal. The second one to which I refer rests with the amateur himself; it is this, instead of trying to "level down" other lofts to "level up" his own. Am I far wrong in my conjecture, that most of the would-be reformers who have written so much of late on this subject are dabblers in many kinds instead of excelling in one? and is not this the root of half the failures? I am surrounded with fanciers of this stamp, and I find them subject to frequent attacks of disgust at the fancy. I say, But why don't you keep one good pair instead of so many inferior? The idea is at once acceptable, but they say the price of good birds prevents them carrying it out, but look in their lofts, you see ten pairs, the average cost of which is 30s. a pair, total £15, with which they might have secured the foundation of a loft that in a year or two would produce feelings the opposite of disgust.—WILLIAM MINSON, *St. Ives, Hunts.*

BRAHMAS.

As several have given you their opinion of Brahmas, I will tell you what I think of them and how I like them after several years' acquaintance. The Light variety, which I have only kept, are undoubtedly taking in appearance, especially so, if judged from most specimens seen at shows; but the pure white colour soon turns to yellow if exposed to the sun, particularly in the cocks, and both they and the hens soon look dirty if not scrupulously attended to. As to their useful qualities I have found them fair layers of smallish eggs, with rather too frequent a tendency to sit. For rearing chickens I find them docile enough but dreadfully clumsy, and although I have set dozens of them I have never yet got them over the twenty-one days without a smash among the eggs; this same clumsiness militates very much against them when in charge of a brood, as if at all flurried they are pretty sure to tread down some one of their young charge. Apart from this awkwardness they are well enough to rear chickens if size is not required, but if it should be, it is useless to try and obtain it with them as they invariably desert their chickens when the mother's warmth is most required. A Brahma chicken on the table is veritably all legs; it certainly may be improved by the Dorking cross, but after all it is but a bad substitute for the Dorking pure. Brahmas will do in a small space, and this is their great point, but if the birds can have their liberty they cannot compare to the Dark Coloured Dorkings; the latter lay an equal number of eggs of large size, cannot be beaten as mothers, and are unequalled on the table. What more can you desire or expect?—MILES.

BLACK COCHINS.

THE Committee of the Great London Show have promised to give a second and third prize and a class to themselves if a three-guinea cup be offered. I shall be happy to receive subscriptions to further the same, which will be duly acknowledged.—F. C. HASSARD, *Sheerness.*

I QUITE endorse Col. F. C. Hassard's opinion respecting Black Cochins. I have myself been a breeder of this splendid variety for the last seven years, and admire them not only for the beauty of their plumage but also for their good properties as layers and mothers. They do better in a small place than any other variety I ever kept, and do not show dirt in London as all other lighter-coloured sorts do. I shall be the first to offer my guinea towards a prize at the next Great London Show and I am convinced that some excellent specimens will be brought forward. They certainly do not stand the least chance against Whites or Partridge, and therefore I never show mine. I have

no idea of what Col. Hassard possesses, but beg to say that I can show four cocks and two hens now, the pick of my stock, which is considerable in proportion to the scarcity of the breed, that would be admired by all amateurs of that breed. I have also corresponded with several other breeders, and feel sure that we shall be able to obtain a subscription large enough to offer three prizes, and perhaps a cup and two prizes should the Crystal Palace Poultry Committee be agreeable to let us bring forward our despised pets.—A. A. VANDER MEERSCH, *Rose Villa, Merton Road, Tooting, S.W.*

ADOPTED CHICKENS.

THE following "experience" may possibly interest some of your readers. I had the other day two fine young Brahma-Dorking hens confined in rips—No. 1 with eight chickens five weeks old, and No. 2 with ten about four weeks old. They both commenced laying within three weeks of hatching, but at first continued to treat their chickens pretty well. They were both, however, becoming restless, and at the time I speak of No. 1 was allowed to join the other fowls, still keeping her eight chickens with her. Naturally the charms of society soon led her to neglect them, and in the course of a day or two my gardener summoned me to witness a curious spectacle. She had very considerably given these chickens an extra meal in a cow house devoted to sitting purposes, and, after doing justice to this, they were all found clustering round an old Brahma hen which had been set about a week. She seemed quite delighted with her precocious offspring, and clucked to them as if she had hatched them herself. Whether she or they made the first advances, of course we cannot tell.

This hint was too valuable to be thrown away, so I speedily transferred her eggs to another hen, and installed her in the evening in No. 2's rip with eighteen chickens. The two broods I should have said had long been playfellows. They are all as happy as possible, and I probably owe their preservation during the last few cold nights to this good old hen's fostering care.—E. H. R.

FOWLS IN THE AZORES.

THE climate is mild, the coldest nights in winter seldom as low as 40°, and the summer temperature seldom over 80° in the shade on the hottest days. Fowls seem to lay all the year round, and there are always young chickens running about. Fowls there are worth about 10*d.* each, and eggs are three for a penny.—RAMALHO.

[M. FOUQUE continues, in the current number of the *Revue des Deux Mondes*, his series of papers on the Azores, giving in this chapter some account of the products of cultivation in the islands, and of the various organic forms to be met with. It is mentioned, that while in 1840 the number of cases of oranges exported to England from San Miguel was only 60,000 to 80,000, in 1850 it had risen to 175,000, and last year it was about 600,000. A great pest in agriculture in these islands is the innumerable multitude of granivorous birds, and vigorous means of defence have to be adopted. The writer, in treating of the animal and plant species of the Azores, rejects the theories founded on propagation of species from a distance, and inclines to the idea of local origin.—(*English Mechanic*.)]

WASHING A FOWL FOR EXHIBITION.

AFTER my old birds got used to it, I found I had hardly ever to use the straps at all, but when put on the saddle they would keep quiet of themselves. Finding such ease and comfort in the plan, I took to giving my best birds a daily washing of face, head, and feet; and they became so tame and used to it that they would allow me to pick them up in the yard at any time except when feeding. One old cock in particular—a great pet of mine—which had been used to the saddle for two or three years, on my projecting it for use from the old dresser in my stable, used to jump on the dresser top, and give a lusty crow and flap of the wings, as much as to say, "Now for a good wash." He would then eye me inquiringly, which I took to mean, "Are you going to put me on?" and if I still hesitated would step on to the saddle and then wait a few minutes in a sort of forlorn mood, till at length he brightened up, and called to me just as if to his hens, at the same time making sham pecka at the pad, as if thereon lay a most delicious morsel if I would but come and see. I waited one day to see how he would conclude the ceremony without a wash. After various marchings up and down the old dresser, off and on to the saddle, calling, crowing, &c., it terminated in his attempt to mount or rather descend to the saddle without assistance. The attempt I must say was a very sorry affair, for after trying first to put down one leg and then the other for a score of times, he made an indescribable

attempt to slip down both at once, which brought him quickly to the floor. He was on his feet in a moment, looking round wrathfully indignant; when his eye caught the saddle and he flew at it as if at another cock, with his spurs in the air. Being too high he did not reach his aim, but found himself on his tail again; when he rose in a rather stately but subdued style, and slunk off the scene, looking thoroughly disgusted with me, the saddle, and himself.—(From WRIGHT'S *Illustrated Book of Poultry* for May.)

WALSALL POULTRY SHOW.

NO one could be otherwise than pleased with the excellence of the general arrangements of the Walsall Show. The Committee are evidently well disposed to work with a will, and what is of equal importance—unanimously. The consequence was, every arrangement was completed so promptly as to give the Judges the whole of the time originally allotted for making the awards. It proved, we are glad to say, quite a success, the new Agricultural Hall being well suited to exhibit the poultry and Pigeons to great advantage. Many of the exhibitors hailed from very distant parts of the kingdom, and it was a pleasure to find that not a few of them attended in person on the day of opening. We need scarcely add the attention paid alike to poultry, Pigeons, and Rabbits was unexceptionable. Few individuals anticipated so good an entry precisely in the breeding season, and that may possibly be assigned as one reason why the entries reached five hundred pens. The premiums offered were good, and in addition to money prizes eleven silver cups were awarded.

The Dorking cock class was good, the principal winner being sent from out of Hampshire. The hens of this breed, however, constituted a still better class, and the hen exhibited by Mr. H. Lingwood proved, consequently, the cup-winner. In Buff Cochins Mr. S. R. Harris, of St. Day, Cornwall, took the cup with a very well-shown good coloured young cock sent in capital condition, but which, if a little more heavy in the feather, would be improved. The first in hens of this variety was taken by Mr. H. Tomlinson with a superior-coloured bird, shown in very excellent condition, but which certainly was not equal in size and contour to some previously shown by that exhibitor. Messrs. Aspdon of Church, and Stephens of Walsall, had entered especially good Partridge-feathered Cochins, the hen shown by the latter gentleman being a remarkably pure-feathered one. In White Cochins, as might be expected, Mr. Woodgate, of Tunbridge Wells, had all the best of the battie to himself, though some really good birds also competed from other yards. We cannot say much in favour of the Light Brahmas, the cocks as a rule proving very yellow for so early in the season, whilst most of the hens were very cloudy in the hackle; the first-prize hen, however, was quite an exception to this general failing. The breed as yet this year certainly does not show any marked improvement, but, on the contrary, somewhat of a retrograde movement. Dark Brahmas, were, however, much better, particularly the cup cock shown by Mr. Horace Lingwood in first-rate feather. Mr. Ausdell here showed both good cocks and hens, but certainly not in the same good show trim that has marked his exhibits during many former years. The Spanish were unexceptionably good classes; even Bristol, Birmingham, and the Crystal Palace Shows could not boast of better. Messrs. Boulton of Bristol, and Jabez Walker of Wolverhampton, divided the principal spoils with admirably conditioned specimens. In the Game lists Messrs. Fletcher of Manchester, and Mathews of Stowmarket, were competitors with grand pens, both of these well-known breeders showing birds hard as whalebone in the feather, and which were evidently quite ready and no less willing to have vindicated their right as Game fowls in other positions than the show pen. A lovely-feathered Black Red was the cup-taker, after a very lengthened inspection by the Judges, against the first-prize Brown Red hen, she being equally faultless in every point; the time thus occupied proved afterwards thrown away, as both were the property of Mr. Fletcher. The second-prize Brown Red Game cock also belonged to Mr. Fletcher, and was in his present condition very little inferior to the cup-winner. In *Hamburghs*, though Mr. Beldon won three out of the four first prizes offered for the different varieties, Messrs. Duckworth, comparatively new exhibitors, carried off the cup with a Golden-pencilled cock wonderfully neat and true-feathered. *French* fowls were admirable. It is indeed but very rarely any are seen so good; in fact, in the cock class every pen obtained favourable notice, the prizes going in this order to *La Flèche*, *Crève-Cœur*, and *Houdans*. In the hen class, though scarcely less praiseworthy, *Crèves* here took everything. Golden-spangled *Polands*, *Malays*, and *Black Hamburghs* took places in the prize list for *Any variety* in the cock class; and in that for hens a marvellously well-developed *Black Cochins* hen, *Golden-spangled Poland*, and *Silver-spangled Poland* took precedence in the order named. Some few good *Game Bantams* were competing, but the other varieties of *Bantams* were not so good as they might have been. *Aylesbury Ducks* were decidedly at a great discount, but the *Rouens* were good. A very fine-plu-

maged pen of Whistling Ducks, sent by Mr. Yardley, took first in the Variety Duck class; and the Selling classes were replete with good birds at low prices, many of which soon changed owners.

The divisions appropriated to the Pigeons and the Rabbits were equally meritoriously supplied with first-rate specimens, and did not lack admirers.

Although the weather proved very variable (changing from snow to sunshine, oftentimes in even the space of a few minutes), there was not any lack of company during the time the Show was open to the public.

PIGEONS.

The entries at this Show were not so numerous as we expected, there being only 125 pens. This to a great extent is to be accounted for by our being at the commencement of the breeding season, still the majority of the birds were good, and we can safely say quality made up for quantity.

Pouters had a class assigned for each sex. In the cock class a good Black was first, Blue second, White and Yellows being the representatives in the hen class. Carriers also had two classes. A good Black was first; this bird also won the cup as the best bird in the first six classes of Pigeons. A Dun was second. In the hen class both the winners were Blacks of good quality. Barbs were a good class of nine pens; Black first, Yellow second, which was immediately claimed at £6. Tumblers (any variety), consisted of Almonds, Mottles, and Agates, the former taking both prizes, and good birds they were. In the Owl class, both foreign and English competed together. Blue foreign first, and Silver English second. Turbitts contained three pens only; all were Reds. Jacobins were a nice lot; a very good Red was first, and also obtained for its owner the cup for the best bird in this and the six following classes. Yellow was second, a good hood and frill bird, though large and coarse. Dragons were by far the strongest class in the Show. Good Blues were first and second; Yellow and Silver highly commended. Some exhibitors in this class seem to think length of bill is the only quality a Dragon should possess. Antwerps were not of the quality we expected to find them, excepting the prize birds, which were Silver Dun and Blue respectively, and singular to say none of the crack Birmingham breeders exhibited. Fantails were a very good lot; White and Blue took the honours between them. Nuns were a mixed lot; all of them had the scissors freely applied to them.

In the Any variety class, Black Mottle Trumpeter (new type), first, Blondinette second and third. In the Selling class for Pouters or Carriers were some really good and cheap birds; White Pouters first and third, Black Carriers second. Selling-class pairs were not so strong as the preceding class, Silver Dragons, Black Trumpeters, and Barbs being the winners.

The arrangements were good, with plenty of light, the birds being in two tiers along the side and end of the Hall. Turner's pens were used, they were all well sanded down, and Carriers fed out of pans. We hope the Show was a success, then, doubtless, the date of the next Walsall Show will be altered so as not to fall at the start of the breeding season, as this appears to be the only fault the Committee have made. They are the most hard-working and energetic men we have met with for a long time.

DOCKING.—Cock.—1, T. C. Burnell, Michelfever, 2, J. Watts, King's Heath, Birmingham. 3, A. Darby, Bridgnorth. Hen.—Cup, H. Lingwood, Needham Market. 2, J. Watts. 3, E. W. Southwell, Fakenham.

COCHIN-CHINA.—Cinnamon or Buff.—Cock.—Cup, S. R. Harris, St. Day. 2, W. Bayliss, Walsall. 3, T. H. Readman, c. H. Lingwood. Hen.—1, H. Tomlinson, Birmingham. 2, W. P. Farnall, Erdington. 3, J. Cattell, Birmingham. 2, T. Barnett, Walsall. c. J. Bloodworth.

COCHIN-CHINA.—Partridge.—Cock.—1, T. Aspden, Church. 2, A. Bamford, Middleton. 3, J. Stephens, Walsall. Hen.—1, J. Stephens. 2, Rev. H. L. Storey, Bedale. 3, J. W. Taylor, Ulverston. c. J. Wood, Preston.

COCHIN-CHINA.—White.—Cock.—1 and 3, R. S. S. Woodgate, Pembury. 2, Mrs. A. Williamson, Leicester. c. Mrs. A. Williamson; W. Whitworth, jun., Manchester. 3, J. Bloodworth. Hen.—1 and 3, R. S. S. Woodgate. 2, H. Beldon, Bingley. c. Mrs. A. Williamson; C. Bloodworth; W. Whitworth, jun.

BRAHMA POOTRA.—Light.—Cock.—1, T. A. Dean, Hereford. 2 and 3, Mrs. A. Williamson. c. Rev. N. J. Ridley, Newbury. Hen.—1 and 3, Mrs. A. Williamson. 2, S. Sambrooke, Camden. c. J. Bloodworth. c. T. A. Dean.

BRAHMA POOTRA.—Dark.—Cock.—Cup, H. Lingwood. 2 and 3, T. F. Ansell, St. Helen's. c. J. Watts; T. F. Ansell. Hen.—1 and 2, T. F. Ansell. 3, E. Pritchard, Wolverhampton. c. H. Lingwood; E. Fearon; J. Watts. c. Capt. D. Lane.

SPANISH.—Cock.—Cup and 2, J. Bonilton, Bristol. 3, J. Walker, Wolverhampton. c. J. Pitt; T. Andrews. c. J. Walker; H. F. Cooper. Hen.—1, J. Walker, Walsall. 2, Mrs. Tonkin, Bristol. 3, T. Andrews, Wolverhampton. c. H. F. Cooper.

GAME.—Black or Brown-breasted Red.—Cock.—Cup and 2, J. Fletcher, Manchester. 3, S. Matthews, Stowmarket. Hen.—1, J. Fletcher. 2, H. E. Martin, Fakenham. 3, Mrs. H. J. Bayley, Tenbury.

GAME.—Any other colour.—Cock.—1, S. Matthews, Stowmarket. 2 and 3, J. Andrews, Worcester. 3, E. C. Gilbert, Penkridge. Hen.—1, S. Matthews. 2, J. Forsyth (Duckwing). 3, E. Pugh.

HAMBURG.—Golden or Silver-spangled.—Cock.—1, H. Beldon, Bingley. 2, G. & J. Duckworth. 3, T. Blakeman, Wolverhampton. Hen.—1, H. Beldon. 2, J. Bates. 3, H. Feast. c. Capt. W. Coath, Walsall; W. M. Duignan, Walsall. c. J. Piant, Walsall.

HAMBURG.—Golden or Silver-pencilled.—Cock.—Cup, G. & J. Duckworth, Charch. 2, H. Beldon. 3, T. B. Smith, Bristol. c. T. H. Readman, Whitby. Hen.—1, H. Beldon. 2 and 3, T. H. Readman. c. G. & J. Duckworth.

FRENCH.—Cock.—1, Rev. N. J. Ridley, Newbury. 2, J. J. Malden, Biggleswade. 3, H. Feast, Swansea. c. C. H. Smith; G. W. Hibbert; Miss E. Williams, Montgomery. H. Feast; W. Dring. Hen.—1, G. W. Hibbert, Manchester. 2, J. J. Malden. 3, W. Dring. c. G. W. Hibbert; H. Feast.

ANY OTHER VARIETY.—Cock.—Cup, H. Beldon. 2, Rev. N. J. Ridley. 3, H.

Feast. c. J. Stephens. c. H. Mather; T. H. Readman. Hen.—1, A. Darby, Bridgnorth (Black Cochins). 2, H. Beldon. 3, C. Bloodworth (Silver Poland). c. S. R. Harris (Anconal). c. H. Feast; J. Freeman.

GAME BANTAMS.—Black or Brown-breasted Red.—Cup, W. Adams, Ipswich. 2, A. Ashley. 3, S. Smith. c. T. W. Anns; T. Barnett; G. E. Small. Any other variety.—1, S. Smith. 2, J. Adkins, jun. 3, W. Adams.

BANTAMS.—Any variety not Game.—1, H. Mason, Walsall. 2, J. Watts. 3, H. Yardley.

DUCKS.—Aylesbury.—1, T. Tomlinson, Barv. 2, Capt. V. Toogae, Aldridge. Rouen.—1, E. Kendrick, Lichfield. 2, J. Watts. 3, E. Smith, Tumpeter, Cheshire. Any other variety.—1, H. Yardley, Birmingham. 2, J. Watts. 3, Mrs. H. J. Bayley, Tenbury. c. Capt. W. Coath, Walsall.

SELLING CLASS.—Cock.—1, W. Perrie, Nantwich. 2, D. A. Dean, Marden, Hereford. 3, S. Mills. c. J. Forsyth, Wolverhampton; J. Stephens, Walsall (2); H. Yardley; A. Darby, Bridgnorth; J. Cattell, Birmingham; Mrs. A. Williamson, Leicester. Hen.—1, J. Stephens. 2, J. Butterworth, Rochdale. 3, J. Bayley, Walsall. Extra 3, H. F. Cooper, Walsall. c. J. Pitt, Wolverhampton. c. H. Yardley; J. Freeman.

ANY VARIETY OF POULTRY.—1, H. F. Cooper. 2 and 3, J. Stephens. 3, J. Bates, Walsall. c. H. Yardley; J. H. Watkins.

PIGEONS.

POUTERS.—Cock.—1, H. Pratt, Loddles, Birmingham. 2, W. Nottage, Northampton. c. R. Fulton, London. c. H. Pratt; Mrs. Ladd, Calne. Hen.—1, Mrs. Ladd. 2 and 3, R. Fulton. c. H. Yardley.

CARRIERS.—Cock.—Cup and 3, R. Fulton. 2, H. Yardley. c. S. A. Cooper, Walsall. Hen.—1, H. Yardley. 2 and 3, R. Fulton. c. H. Beebe, Walsall.

BARBS.—1, R. Fulton. 2, W. Massey, Spalding. c. H. Yardley. R. Fulton.

TUMBLERS.—1, R. Fulton. 2, H. Yardley. c. R. Fulton; H. Yardley.

OWLS.—1, R. Fulton. 2, S. A. Cooper. c. H. Yardley; S. A. Cooper (2). c. W. E. Lee.

TURBITTS.—1, J. Watts. 2, H. Yardley. c. R. Fulton.

JACOBINS.—Cup and 2, R. Fulton. c. R. P. Hickman, Upper Penna, Wolverhampton. c. R. J. Goodwin, Stoke-upon-Trent.

DRAGONS.—1 and 2, H. Yardley. c. J. Watts; H. Yardley. c. D. Mitchell, Mosley.

ANTWERPS.—1, H. Yardley. 2, T. Edwards, jun., Wolverhampton. c. J. Cox, Wolverhampton.

FANTAILS.—1, J. Walker. 2 and 3, H. Yardley. c. J. Walker; J. F. Loveridge, Newark.

NUNS.—1, Rev. A. G. Brooke, Shrewsbury. 2, D. Mitchell. c. J. Watts. c. S. A. Cooper.

ANY OTHER VARIETY.—1 and 2, R. Fulton (Trumpeter). 2 and 3, H. Yardley. c. J. H. Watkins, Hereford.

SELLING CLASS.—Pouters or Carriers.—1, Mrs. Ladd. 2, H. Yardley. 3, W. Massey, Spalding. c. H. Yardley; J. Watts. c. W. Nottage; J. Watts; W. York. Any other variety.—1, 2, and 3, H. Yardley. c. J. H. Watkins. c. W. Bennett.

RABBITS.

LENGTH OF EAR.—Cap, J. Cranch, London (23 in. by 5 in.). 2, F. Banks, London (24 in.). 3, H. Wood, Birmingham (24 in.). c. W. H. Webb, jun., Cosely, Bilston (24 in.). c. E. Brimston, Darlington (24 in.).

WEIGHT.—1, J. N. Gilbert, Walsall (15 lbs. 12 ozs.). 2, W. M. Duignan, Walsall (12 lbs. 10 ozs.).

ALL PROPERTIES.—1 and 3, F. Banks. 2, J. Hume, York. c. W. Whitworth, jun., Longsight, Manchester (2); T. Millington, Wednesbury; H. Attwood (2). c. W. Cox; W. H. Webb, jun.; G. Philips, London.

COLOURED CLASS.—1, J. Cranch. 2 and 3, C. King, London. c. W. H. Webb; G. Philips; D. Maybury, Darlington.

JUDGES.—Poultry: Mr. E. Hewitt, Birmingham and Mr. J. Martin, Worcester; Pigeons: Mr. J. Siddons, Aston, and Mr. H. Allsop, Birmingham; Rabbits: Mr. H. Yardley, Birmingham.

THE PIGEONS AT THE DUBLIN SHOW.

ALLOW me, as one of the Judges of the late Royal Dublin Society's Show, to object to the inaccuracy of your correspondent's report. He remarks in Pouters, "second-prize bird was far better but a little out of plumage," had he looked more closely he would have seen something else. Mr. Yardley's first Carrier cock was an excellent bird in head, although small. The cup hen Carrier was worth far more than £5 as he states, being a really good bird, and in head far before the Dun hen he mentions. Next, "The Tumblers were all Long-faced." The first and second Reds and Yellows were Short faced, also a pair of Blue Beards in the same class. In Fantails, Mr. Walker's winners instead of not looking worth half the £8 claimed at were considered by many fanciers (who really know the value of prize birds, and not only pie rubbish) to be cheap, being a wonderful pair, far above any hen in 294. In Jacobins the first and second were better in cowl and chain than 298, although all extremely good. There were some excellent Turbitts, which have shown their claim to the title of prize-winners—i.e., having been mentioned at first-class shows. These are designated "great rubbish." Next, three out of four pens of Dragons had nothing of the Carrier about them, the winning Silvers and Mr. Yardley's Blues being very good.

I object to the rule of "limitation," and am glad to hear it will not be repeated, but undervaluing any good bird that happened to be shown is not the way to cure it.—C. F. STANTON.

[We have other letters criticising our correspondent's too severe notes on the Pigeons, but the above is all that need be published.—EDS.]

AN INDEFATIGABLE HEN.—I have a Silver-spangled Hamburg pullet hatched on the 6th of October last, that commenced laying the second week in February, and laid twenty-seven eggs in succession without missing a single day. She has now seven chickens a fortnight old, and commenced laying again yesterday (April 21st).—H. A. MANN.

REASONABLE REFORM.—A reform which has been long talked about, has at last been effected in Massachusetts. The Great and General Court has ordered that hereafter eggs shall be sold

by weight. It is fixed that a dozen eggs shall weigh 1 lb. 8 ozs.—(*New York Tribune*.)

LIMITING THE PRICE OF PIGEONS AT THE DUBLIN SHOW.

YOUR correspondents on this subject should bear in mind that this is strictly speaking an agricultural Show, and it is only through pressure being brought to bear on the Committee that they have permitted Pigeons to be included in the schedule. Not knowing anything about the birds, they permitted three exhibitors, resident in Dublin, to draw up the schedule. The classes were arranged fairly enough, except that (as neither of the three exhibitors keep them) they struck out Magpies, and put in a class for Jacobina to suit Mr. Seale's birds (this is the only class in the schedule in which colour is mentioned). They then made up the price rule, which has been so much discussed. When I got the schedule I at once wrote to the Committee and pointed out to them, that whoever made the list of prices must have intended the classes for himself or his friends, as the prices were fixed without any reference to the recognised value of the birds, and would exclude most of the leading exhibitors. I had a reply that my letter was too late for this Show, but would be considered next time. Mr. Seale, who is responsible for the rule about price, wrote through your columns, not avowing his position, but defending the rule, and saying there was a large entry. He was right as far as number is concerned, but of the 132 lots shown, forty-four, or one-third of the entire number, were the property of Mr. Seale; the two other advisers had respectively twenty-seven and eleven, a total of eighty-two between the three of them, leaving fifty lots to be divided between seventeen exhibitors. One of your correspondents said the framers of the rules had limited the price with one hand and given special prizes with the other. We now see the result in Mr. Seale winning the cup for Pouters, given by himself. I have authority for saying the Society will have no such rule again, so I will let the matter rest.—JOHN DOWLING, *Blackrock, Cork*.

GUINEA PIGS AS MEAT PRODUCERS.

THE Guinea Pig is extensively used in Peru as an article of food, not merely by the higher classes as a delicacy, but mainly by the poor from its cheapness and abundance. It is an entirely herbivorous animal, and a clean feeder, being there chiefly maintained on green lucerne or trefoil; but it would, doubtless, thrive equally well on cabbage or lettuce leaves, and most sorts of green garden stuff—in short, on the same food as the Rabbit, to which it has many points of similarity. Its only similitude to the rat is, that after the hair has been scalded off, it presents an appearance not unlike what a large rat might do if similarly treated—minus the tail.

For cooking it is not skinned, but the hair being scalded off, it is split open and cleaned, and is generally fried entire in a fryingpan, or sometimes grilled over the coals. Thus prepared it is savoury and delicate, the flesh being white, succulent, and nutritious, very superior to the Rabbit, and it makes a most excellent dish. The cost of rearing and keeping them is next to nothing, and their introduction into this country as an article of food would prove an excellent and inexpensive addition to our materials for the breakfast or dinner-table.—W. MACANDREW, *Westwood, near Colchester*.

NEGLECTED BREEDS.—I will join "BLACK JACOBIN," in subscribing towards a class for fowls for table purposes; all birds to be hatched in 1873, and either pure bred or the result of a first cross. I am quite of opinion that the single-bird system is preferable to that of showing pairs, especially for the large breeds.—C. L. SHARMAN, *Church End, North Finchley*.

POULTRY AND OSTEND RABBITS.—An immense annual trade is carried on in the importation of foreign poultry and Ostend Rabbits. This year already the value amounts to £77,679, being a great increase on the preceding year.

NADIRING.

PRACTICALLY, I think, your correspondent "A RENFREWSHIRE BEE-KEEPER" and I are agreed; and yet, it seems to me, he misapplies the term "nadir" in his remarks on this subject at page 273. Surely he is speaking of an eke, for that, and not a nadir, is "merely an extension of breeding space." The nadir is something different; at least I have always understood it to mean a distinct box placed under a stock, not for breeding purposes, but with a view to obtaining honey. Therefore it is obvious I am speaking of something quite different from your correspondent; and so I hold to the advice I gave in your Journal of March 20th as both sound and intelligible.

I object to the use of nadirs altogether. The only occasion on which I would make use of a box as a nadir is with a view to tempt when we often cannot "compel" bees to "press up into a super." My so-called nadir, therefore, is nothing more than a super placed temporarily under a stock-box in order to induce the bees to work comb in it, to which they may adhere after its removal to its proper place over the hive. If your correspondent had not confused the terms I should have agreed with all he has said. Nothing can be more excellent than his advice, when once bees have fairly taken to a super to eke (not nadir) the stock, both to prevent swarming and to augment the population, so as to complete that and succeeding supers. Shallow supers, too, should always be used.—B. & W.

BURGLAR AND FELON BEES.

YOU may remember last year you kindly telegraphed me in the autumn, in reply to a telegram of mine stating that civil war had broken out in my bee-house of ten stocks. I then asked for advice as to how I could stay it, and you recommended moving the skeps to different parts of the garden, which I accordingly did with those that were fighting, and think it was the means of saving some bees, though I lost four strong stocks by it. I never saw bees fight so desperately. In a very short time they had killed all the bees and taken all the honey out of a very large and strong stock. I tried all sorts of means to stay them, and was constantly driven back by their fury, though carefully guarded by dress and gloves. A friend of mine had his bees similarly disaffected, and he resorted to the brimstone pit with most of those that were being attacked, and saved an immense quantity of honey. I wish I had done the same.

But my object in writing you now is to tell you of a curious circumstance which happened to a large strong stock in my apiary this day. It was a thick straw skep with a flat top, 16 by 10 inside measure; and when weighing my skeps this spring I found it so heavy that I did not think it worth while to give it any syrup, as I did to all the others, though some were nearly as heavy. At noon to-day I found the skep was being attacked. I had noticed the previous day or two that the bees seemed rather sluggish, though previously they had looked well. I immediately narrowed the entrance, but, finding it of no use, I determined to drive the bees out without further delay. After driving for about ten minutes I looked to see the result; but no bees having gone up I examined the combs, but could see only a dozen or two of robber bees in the hive. Upon this I immediately cut the combs out, thinking I should find them partly full of brood, which would not keep till I could get a swarm; but I found not a single piece of brood comb, but lots of capital honey—I should think at least 30 lbs., and plenty of bee bread. On looking over the combs I found the queen alive, but she seemed injured. I killed her with chloroform, and send her for your inspection, as it seems a curious occurrence and one which I cannot account for, unless the queen was old and unprolific and the bees would not put up with her any longer, but left for better quarters, though where they went I am not able to ascertain. If you feel inclined to insert this and reply in your Journal I should feel obliged.—B. B. ALEXANDER.

[Your queen did not reach us. No doubt, as you suppose, she was in a feeble condition and the bees deserted her. But this is not the most usual course. Ordinarily they remain and fight off all intruders so long as their life or their honey store lasts.]

SPRING FEEDING IN COLD WEATHER.

LET me give a word of warning to all bee-keepers to see that their bees do not starve during these inclement east winds, when honey is nowhere in the flowers. It would be a great pity to lose valuable hives that have survived the winter, for want of a pound or two of sugar syrup at this season.—B. & W.

PREVENTING HENS EATING THEIR EGGS.—If hens are put in a dark place to lay, where they cannot see their eggs, they cease from egg-eating.—EXPERIENCE.

OUR LETTER BOX.

BOOKS (W. Hay).—Our "Poultry Book for the Many," price 6d., we think would quite suffice for your poultryman. The best when completed will be Mr. Wright's "Illustrated Book of Poultry." Fourteen shilling numbers have been published, and eleven more are to follow. (*Ramoth*).—The "Poultry Book." You can have it free by post if you enclose seven postage stamps with your address.

CHILDERDITCH.—We are much obliged by your letter and enclosure. We will answer it in full in a later number.

DUBLIN POULTRY AND PIGEON SHOW (O. P. H. T., and others).—Besides the letter we publish to-day we do not think more need be stated.

BANTAMS AT DIPTON SHOW.—In the prize list given at page 347, the names of Messrs T. & J. Robson, of Bishop Auckland, were accidentally omitted as taking the first prize for "Bantams, any other colour."

GAPES IN CHICKENS (Birdie).—In our last number but one (April 17th) we stated all that we know on the subject. The origin of the worms is a disputed point. They cause the gapes, and many (ourselves among the number), believe they come from stagnant and impure water. No medicine is of any avail, because the worms exist only in the trachea, and the medicine does not touch it. They are, nevertheless, easily curable. When the chickens are old enough give a pill of camphor the size of a garden pea. Camphor is the strongest vermifuge, and its odour pervades the windpipe while it lies in the crop. Give the chickens only water strongly impregnated with camphor to drink; this is a certain cure, and we have never known it fail.

POULTRY IN PADDOCK (C. A.).—Enclose seven postage stamps with your address, and order the "Poultry Book." It will be sent by post. In it you will find all the directions you need.

HATCHING FAILURES (R. H.).—The present will long be remembered as a trying time for hatching. There have been more failures than we ever recollect. We can only attribute it to the bad weather. It must also be borne in mind that early eggs do not hatch so well as later ones. The clear eggs that had not changed were not impregnated. The others had at one time had the germ of life in them, but it had died, and they became rotten. Where an egg has the white and yolk mixed, it is generally the result of frost. The failure of many of your eggs was doubtless from chill in the early days of incubation, arising either from the hen being off too long, or from her sitting hollow, or from being exposed to the cutting east wind. During such weather as we have had the hen should never be off the eggs more than a quarter of an hour, and she should always be shut in. You may give up eggs if, when you feel them, they are cold. When eggs are put in tepid water a few days before hatching, the good ones will wobble and be full of motion; those that remain quiet on the top of the water are failures.

TWO-YEAR-OLD BRAHMAS (H. E. C.).—You may keep the Brahma hens, but not the cock. Our experience is decidedly against three-year-old cocks for breeding. If the old bird is clean on his legs, good in comb, and bright in plumage, he is worth keeping or selling as a show bird. If not, he must go to the kitchen. Sitting hens require to be well fed. Warmth of body is increased by it, and the chickens are consequently stronger. We always give ours barley, maize, and barley-meat. Millet is not good; it has only fattening properties. A sod of growing grass is always beneficial to hen or chickens. The rip may be put on the grass. We never have any bottoms to ours, but while the nights are cold, and when the chickens are very small, they are covered in with a board. We would sooner have the earth covered with grass, or a gravel walk, for chickens than any artificial flooring. Grits are such as are used for gravel.

SPANISH COCK'S FACE SWOLLEN (Amateur).—We expect your cock has a cauliflower face, and that which you call a swelling is simply natural growth. In many cases it closes the eye entirely. It is sometimes washed with alum and water with benefit. In other cases the lids are fastened back with sticking-plaster, but they are only temporary expedients, and the exaggerated beauty becomes at last an incurable defect. There is an excellent Pigeon book published at our office.

FOWLS FEATHER-EATERS AND ELEPHANTIASIS (F.).—You do not tell us whether all your poultry are similarly affected, or only those that are shut up for pure eggs for sitting. We have suffered from both the complaints you name, but never among our birds that are at liberty, only among those in confinement. The elephantiasis is comparatively a modern disorder, dating seven or eight years back. The feather-eating is as old as poultry. We have cured the first in its early stages by keeping the legs constantly oiled. We are at present free from it, and never have it till the end of the season, when the birds are naturally out of condition. It is also much worse in old than young birds. The feather-picking can only be cured by giving the birds their liberty and removing any that are really bare. We have seen them with only their tail and wing feathers left. Your feeding is unsatisfactory. You may give meal in the morning, Indian corn mid-day, and meal in the evening. Thus you will give three meals instead of two, and above all discontinue the potatoes. The feather-eating arises from a diseased and disordered stomach, craving for something the bird cannot get. Potatoes create much intestinal fat; this impedes the action of the gall and liver, causes maladies in both, and probably induces the habit of which you complain. Cannot you manage to let each breed have a separate run, or to divide the day, each having six or seven hours' run, and thus do away with the necessity of shutting any up?

DETECTING THE SEX OF CHICKENS (E. R.).—At a few weeks old the sexes are easily distinguished. The cocks show a distinct comb, and in many breeds the plumage differs.

CHICKENS DYING IN HATCHING (J. Y. C., Acton).—We have no doubt your chickens die in the shell from the eggs being too dry. For a week before hatching they should be wetted every morning, or at any time when the hen is off the nest. Failing this assistance the inner membrane of the egg becomes as hard, tough, and brown as Indian rubber. Few chickens can get through it. When the hen is off, dip your hand in water and wring it over the egg freely.

PROMOTING FEATHER-GROWTH (New Ross).—Rub the Dorking cock's neck with compound sulphur ointment. He must be put by himself. It is probable the hens have picked out the feathers. All eggs should be damped frequently towards the end of the period of incubation.

YOLKLESS EGGS (R. W. C.).—All such occurrences as you mention are the results of derangement of the egg-producing organs, and are sure to come right. The only exception we ever knew was a hen that laid double eggs. She did so two years in succession, and we were obliged to kill her. Men said more than a thousand years ago they could tell the sex of the chicken by the shape of the egg, but they never did so. Men are still under the impression they can pick them out, but they never make their experiences public. We do not believe anyone can do it. We have given professors the opportunity of choosing among any number of eggs, on the condition we were to be made acquainted with the result. They never accepted our offers, nor will they.

EGGS UNPRODUCTIVE (J. G. A. B.).—Under the circumstances we think a sitting at half price sufficiently liberal.

PIGEONS PARROT-BEAKED, &c. (J. L. Jones).—We have known excellent straight-beaked birds throw Parrot-beaked young ones, and the opposite, so that we should breed from such a bird. There is no cure for the beak itself. Good beans and tares are the best food for Pigeons.

DANDELION INSTEAD OF HOPS.—Some years back you inserted a letter from Mr. Abraham Hardy, of Maldon, recommending the use of dandelion. He said that a friend was making beer from it. I shall feel obliged to any correspondent who can inform me how it is made. I am told that beer from dandelion and nettles is quite common in Liverpool.—C. E.

WHITE PAINT (Subscriber).—First mix in the pot the stiff ground white lead, with a little spirit of turpentine, into a smooth, uniform cream, adding raw linseed oil, and as much more turpentine as the purpose the paint is intended for may require; finally, tinge it with a little ground Prussian blue, to remove any yellowness, and, if wanted to set very quickly, mix in a little sugar of lead in fine powder.

MET EOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Baromet. at 8 ³⁰ and Sea level.	Hygromet- er.		Direction of Wind.	Temp of Sun at 8 a.m.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1873.	Inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
April.										
We. 23	29.905	42.4	38.8	N.E.	49.1	52.0	29.3	107.2	31.2	0.010
Th. 24	29.913	42.1	36.7	N.	47.7	50.9	31.1	143	28.9	0.012
Fri. 25	30.108	44.9	38.6	N.	46.1	51.0	29.9	104.5	26.6	—
Sat. 26	30.266	43.2	37.4	N.W.	46.2	51.2	30.1	93.2	27.0	0.090
Sun. 27	29.941	45.0	43.1	W.	46.1	48.6	37.2	95.2	33.2	0.028
Mon. 28	30.152	47.4	43.5	N.W.	45.9	56.2	37.0	92.6	33.2	6.115
Tu. 29	30.049	47.9	46.4	N.	45.6	55.4	41.1	91.0	40.1	0.016
Means	30.048	44.7	40.6		46.7	52.2	35.5	98.3	31.5	0.271

REMARKS.

23rd.—Rather dull morning; hail at 1.20, and again at 2.10 P.M.; but fine afternoon and evening.

24th.—Fine morning, snow at 11 A.M.; heavy rain for a short time at 1 P.M.; sunshine and showers in afternoon; fine evening.

25th.—Fine, but cold morning; heavy snow at 11.30 A.M., and at 0.15 P.M.; very cold all day, but frequent bursts of fine sunshine.

26th.—Fine morning; very cold all day, alternate sun and showers, sometimes of rain, sometimes of hail, and sometimes of snow.

27th.—Rain in early morning, the fine heavy shower at 3.15 P.M., shower after occasional hail.

28th.—Fair all day, but very variable, sometimes very dark, and sometimes very bright.

29th.—Early morning wet and dull, showery before noon; but fine afternoon and evening.

Mean temperature nearly 8° below last week; repeated showers of snow, hail, and soft hail, dry northerly winds, and three successive nights with frost.—G. J. SIMONS.

COVENT GARDEN MARKET.—APRIL 30.

A CHANGE to more genial weather has brought a corresponding improvement in the retail demand here, and a fair supply of good hothouse fruit is now offered, comprising Peaches, Grapes, Strawberries, and Pines, the latter being in good request at an advanced price. New Potatoes are now coming-in in large quantities from Malta and Lisbon, prices ranging from 8d. to 6d. per pound. Good old ones are scarce and dear.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	3 0 to 5 0	Mulberries.....	½ lb.	0 0 to 0 0
Apricots.....	doz.	0 0 0 0	Nectarines.....	doz.	0 0 0 0
Cherries.....	½ box	4 0 8 0	Oranges.....	½ 100	4 0 10 0
Chestnuts.....	bushel	0 0 0 0	Peaches.....	doz.	15 0 3 0
Currents.....	½ sieve	0 0 0 0	Pears, late.....	doz.	4 0 8 0
Black.....	do.	0 0 0 0	dessert.....	doz.	6 0 13 0
Figs.....	doz.	0 0 0 0	Pine Apples.....	½ lb.	8 0 12 0
Filberts.....	lb.	0 0 0 0	Pimms.....	½ sieve	0 0 0 0
Cobs.....	lb.	2 0 2 6	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	1 0 2 0	Raspberries.....	½ lb.	0 0 0 0
Grapes, hothouse.....	lb.	8 0 15 0	Strawberries.....	½ oz.	6 0 1 0
Lemons.....	½ 100	6 0 10 0	Walnuts.....	bushel	15 0 30 0
Melons.....	each	0 0 0 0	ditto.....	½ 100	2 0 2 6

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Artichokes.....	doz.	3	0 to 6	Mushrooms.....	potl.	0	0 to 3
Asparagus.....	½ 100	4	0 8	Mustard & Cress.....	punnet	0	2 0 0
French.....		6	0 12	Onions.....	½ bushel	8	0 6
Beans, Kidney.....	½ 100	1	6 2 6	pickling.....	quart	0	6 0 0
Beet, Red.....	doz.	1	0 3	Parsley per doz. bunches	0	4	0 0
Broccoli.....	bundle	0	9 1 6	Parsnips.....	doz.	0	9 1 0
Cabbage.....	doz.	1	0 1 6	Peas.....	quart	6	0 10 0
Capsicums.....	½ 100			Potatoes.....	bushel	6	0 9 0
Carrots.....	bunch	0	6 0 0	Rubbery.....	doz.	0	0 0 0
Cauliflower.....	doz.	8	0 6	Round.....	do.	0	0 0 0
Celery.....	bundle	1	6 2 6	Radishes.....	doz. bunches	1	0 1 6
Coleworts.....	doz. bunches	2	6 4	Rhubarb.....	bundle	0	6 1 0
Cucumbers.....	each	0	6 1 6	Salsify.....	½ bundle	1	0 1 6
pickling.....	doz.	0	0 0	Savoy.....	doz.	2	0 8 0
Endive.....	doz.	2	0 0	Scorzonera.....	½ bundle	1	0 1 0
Fennel.....	bunch	0	0 0	Seakale.....	basket	1	0 2 6
Garlic.....	lb.	0	6 0	shallots.....	lb.	0	8 0 6
Herbs.....	bunch	0	3 0	Spinach.....	bushel	2	0 3 0
Horseradish.....	bundle	3	0 4	Tomatoes.....	doz.	0	0 0 0
Leeks.....	bunch	0	2 0	Turnips.....	bunch	8	0 6 0
Lettuce.....	doz.	1	0 2	Vegetable Marrows.....		0	0 0 0

POULTRY MARKET.—APRIL 30.

We have still a scarcity, and a moderate trade. If the trade were as it used to be, the supply would not be sufficient.

	s. d.	s. d.		s. d.	s. d.
Large Fowls.....	6	0 to 7 0	Phasans.....	0	0 to 0 0
Smaller ditto.....	5	6 0 6 0	Partridges.....	0	0 0 0 0
Chickens.....	4	0 4 6 0	Hares.....	0	0 0 0 0
Goslings.....	7	0 8 0 0	Rabbits.....	1	5 1 6 0
Guinea Fowls.....	4	0 4 6 0	Wild ditto.....	0	9 0 10 0
Ducklings.....	4	0 4 6 0	Pigeons.....	6	9 0 10 0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 8-14, 1873.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	
8	TH	Royal Horticultural Society's Show closes.	62.6	39.6	51.1	18	21	44	32	17	2	3	128
9	F	Fermoy Horticultural Show.	62.6	39.9	51.2	19	19	4	33	7	13	4	129
10	S		62.4	40.1	51.3	21	17	4	35	7	27	5	130
11	SUN	4 SUNDAY AFTER EASTER.	62.4	40.9	51.6	19	16	4	37	7	44	6	131
12	M	Meet. of Royal Geographical Society, 8.30 p.m.	62.9	40.5	51.7	20	14	4	38	7	4	8	132
13	TU		63.5	38.8	51.1	20	13	4	40	7	24	9	133
14	W	Royal Botanic Society's Show opens.	63.2	40.3	51.7	16	11	4	41	7	42	10	134

From observations taken near London during forty-three years, the average day temperature of the week is 62.8°; and its night temperature 40.0°. The greatest heat was 81°, on the 12th, 1833; and the lowest cold 21°, on the 8th, 1855. The greatest fall of rain was 1.14 inch.

AURICULA CULTURE.



WITH the permission of the Rev. F. D. Horner I forward you his letter, which, without any view to its publication, he so kindly wrote me.—BEAUCHAMP STANNUS.

"I will answer your inquiries on the Auricula in the order they arise, and in what I write I simply give you what I know, by long practice, to be successful.

"The Auricula undeservedly has a bad name for being of difficult culture, and for requiring mysterious treatment, but it is in truth a flower very simple in its habits.

"I. 'What mixture of soil suits it best?' Loam, leaf mould, and very old dung in equal quantities, with rough sand enough to keep it open. The best loam is a fibrous kind, yellow or darker, but not peaty: if you could procure the top 4 or 6 inches of a pasture where Cowslips grow, you could not do better for Auriculas. There is no objection to the loam being rather heavy, but it must be mellow and full of fibre. Dung to be so old as to be a black earth. I have used both cow and horse; they do well in either. Frequent turning over of old hotbed dung, where wet weather cannot reach it, soon mellow it down to earth. Dung so fresh as to show any crude material is not safe. Do not use silver sand, but some rough clean-washed sand from a brook side, or, better still, charcoal the size of split peas.

"II. 'Is pot-culture recommended?' There is no other method in use for the high-bred varieties. The Auricula is a plant peculiarly adapted for this. Though a strong rooter, it does not care much for pot-room. Then, again, in the dormant periods of its life it requires careful protection from wet and damp, and this is best afforded by pot-culture. In June and July—the summer rest—they require a diminished supply of water, and hardly any at all in November, December, and January.

"III. 'What sized pots?' A 5-inch pot, inside measure, will grow almost all full plants: very few will require more, though when in full foliage the plant will well cover this. I have a few very large plants in 6-inch pots; younger plants in 4-inch. I do not care for less than 3-inch pots. Plants too small for 3-inch pots I place at the edge of that size, and two or three to the pot.

"IV. 'Water, much or little?' Never much. Over-watering is the most fertile source of mischief. In November, December, and January keep them, not indeed dust dry, but certainly dry; a little water round the rim of the pot once in three or four weeks is generally enough. If the foliage is flaccid, it is a sign of thirst. Do not let this occur if possible. In February the heart begins to look fresh and unfurls, then give them a moist, but not wet, soil, and top-dress them with rich old cow dung and a little leaf mould, removing an inch of old soil till you come to the fibres; be careful to hurt none of these. In March, April, and May keep them in full growing moisture, but not sodden wet, and not watered with manure water. A good watering to go through the ball

will last some time. Drainage to be as perfect as possible. Crocks plenty, covered with long moss, or, better, rough, flaky, decayed leaves.

"V. 'Is a north wall of use?' It is nothing less than necessary. They may even be grown the year round in a north aspect, George Lightbody's plants were: mine are under a north wall in frames from the middle of May to the middle of October. From the middle of October to the middle of May they are in their blooming house, which has a south aspect. Shade is required from strong sun from the middle of March to the middle of May. They must never be exposed to sun that causes them to flag.

"VI. 'Removing offsets?' These are fit to remove as soon as they have lost a few leaves, and have therefore a neck, and the best time to remove them is just before the spring growth. Wait till you see the old plant stir, at the end of February or just before, and then remove any offsets with neck, rooted or not. August, just before the autumn growth, is another good time; this is the time for the offsets not fit in the spring, as spring is the time for those not fit in the autumn. Cut them off the parent at their connection, which is often slight, rub the wound of both with charcoal dust, as styptic and antiseptic, and pot the offsets, keeping them in a close frame and moist till they get roothold; give air in quiet warm weather, and freely when rooted.

"Do not plunge Auriculas. The plant is by no means liable to disease under a common-sense treatment. Bear in mind it is an Alpine plant, fond of pure free air, and delighting in a sweet open compost moderately rich, free from nostrums, and made firm in the pots. Its wants are few—sweet soil, sweet air and plenty of it, sweet water, but never much of it, and never much sun. Damp is its worst foe. The Auricula can bear any cold of our winters, but none of our heavy wet. Frame treatment is but to secure artificially what Alpine winters give naturally—a dry rest under the snow. There is, of course, something to be said for the delicacy produced in cultivating the Auricula up to types that do not occur in wild nature, and would not long survive in a struggle for supremacy on a mountain side. Our modern specimens will not bear what wild ones will, but it is safest to follow nature as far as possible.—F. D. HORNER, *Kirkby Malzeard, Ripon.*"

FRUIT TREE BLOOMING—SUPERFETATION OF PEAR BLOSSOMS?

I wish to ask whether there is anything unusual in the blooming of the fruit trees, especially Plums, this season? In this neighbourhood (Chitheroe)—I am now more especially referring to my own trees—the usually abundant bloomers Victoria and Prince of Wales have scarcely a bloom upon them, whilst on seven Damsons, four of them of large size, I have not been able to discover a single blossom. On the contrary, the Purple Gage, which seldom blooms profusely with me, and Coe's Golden Drop have been covered with bloom, and almost every bloom

seems to have set; if no further severe frost occur, these trees will require very severely thinning.

Pears on walls are full of bloom; standards not yet opened out; indeed, some of my trees in the orchard had all the blossom buds cut-off by the severe frosts of February. I may specify Beurré Clairgean, Seckle, and Beurré d'Amanlis as having their bloom buds entirely destroyed.

Whilst on the subject of Pears, I may mention what seems to me to be a subject of some interest as touching on seminal varieties. Some fifteen years since I noticed a fruit on a tree of the Seckle of three or four times the usual size, and I saved the pips, and raised two trees, which have now been bearing two or three years. The interesting point to which I wish to call your attention is, that although both these trees were raised from the same fruit, they are completely different from each other in flavour and appearance. One is an enlarged Seckle rather coarse in flesh, but improves every year over the quality of the preceding one, and this year I hope to be able to speak of its quality double-worked on the Quince, and grown in the orchard house. Hitherto it has only been grown as a standard in a locality where the original Seckle has never been anything better or larger than a small Crab. The other Pear is a medium-sized melting Pear of high flavour, ripe in October, having no resemblance to the Seckle whatever. The tree from which these two were raised grew in close proximity to a Beurré de Rance; but as other Pear trees were growing on the same wall, the blossom from which the fruit came may have been fertilised by the bees from some other tree. The singular thing, as it seems to me, is that there must have been two distinct fertilisations in the same blossom, as there is no resemblance in the leaf, mode of growth, appearance and quality of fruit, or in anything else between these two fruits raised from the same Pear.

Notwithstanding the excellence of its quality, I cannot recommend the propagation of the high-flavoured one, at least in this neighbourhood, as it is not very hardy when in blossom, and does not hang very well in a wind; but, as even the Beurré de Capiamont is little better here than a Crab if grown as a standard, this might be well deserving of cultivation in a more genial locality.

The other Pear, the enlarged Seckle, is a prodigious bearer, about four times the size of the old Seckle when grown in the orchard, and I hope it may prove of value when double-worked and grown in the orchard; and as to its bearing under glass, I have a small tree double-worked on the Quince which had nine bunches of bloom upon it, on which nine bunches sixty-three Pears set. I hope, therefore, to learn what double-working and glass will do in improving the quality.

The small fruits (Gooseberries, and Red and Black Currants), are so far promising, as the frosts of last week do not seem to have done any damage to them.—T. G.

SEEDING OF MYOSOTIS DISSITIFLORA.

Mr. ROBSON, in his interesting and instructive notes on dwarf hardy edging plants (see page 335), remarks that he has failed to discover this plant propagating itself naturally by seed. I am happy to state that it seeded freely here last season, and I have now a stock of strong self-sown plants, but as yet they show no sign of flowering. I may add that the soil in which the plants seeded has not been disturbed in any way since the flowering period last year.—WM. GARDINER, Lower Easington Park, Stratford-on-Avon.

HOES AND HOEING.

I SHOULD think it is well known that the hoe is one of the most useful of garden implements, and I wish it were not necessary to say that in many places it should be more frequently made use of. To recommend that the hoe should be frequently used among all garden crops is nothing new, and I feel sure if this recommendation were fully carried out it would be esteemed as sound advice as any handed down to us by our ancestors. To use the hoe only as a weed destroyer is not to realise its full value, for, to quote Mr. Johnson's "Science and Practice of Gardening," "hoeing facilitates the access of air to the roots of plants by rendering the texture of the soil easily permeable." The truth of this remark is easily proved by the comparative progress of a crop that is frequently hoed and one that is not. Some gardeners in practice rake the soil after every hoeing; this, I think, is not wise, for it reduces the value of the hoeing by making the soil too fine, and it binds or

cakes on the surface more readily, and air is excluded. If hoeing be properly done the surface may be left even enough without raking. The above are a few facts which the oldest practitioners were acquainted with from the beginning of their career, and which, I think, were regarded by them as of more importance than the rising generation of gardeners appear inclined to assign to them. The ornamental department of gardening attracts the young gardener, and he is too apt to leave a knowledge of the cultivation of the soil to be picked-up piecemeal and imperfectly.

As regards hoeing and stirring the soil, I purpose giving illustrations of some of the best and most useful implements for the various conditions of the soil and the crops. I will commence with the draw hoe.

Draw Hoes (fig. 1).—Of these there are several varieties and sizes. That illustrated, and which is known in Norfolk as the Bloomfield hoe, is fastened into the handle by a strong spike having a long narrow neck, terminating in a broad head, to which the steel blade is attached by three rivets, whilst the handle is kept from splitting by a deep ferule. Another form of draw hoe has a socket for the handle, which should be about 4 feet long. It has a crane neck, to which is attached a plate of iron and steel 6 inches long and 3 broad. These crane-necked draw hoes may vary in size considerably for different purposes, and are most admissible for hoeing between crops,

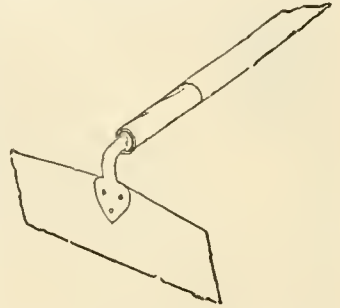


Fig. 1.—Draw Hoe.

as the small neck allows the soil to pass freely over the plate, as well as between the foliage of any crop without injury. A cheaper sort of draw hoe, but with the iron socket or eye closely attached to the blade or plate, is often used; these are liable to clog in wet weather, and take much of a man's time in cleaning; nevertheless, they are useful for drawing earth to plants as well as for loosening the soil before the rake is applied. It is, however, best to have several sizes of these on hand, as a large hoe is not at all times the handiest tool to apply to the job.

The *Crane-necked Hoe* (fig. 2) is another form of draw hoe. There should be several sizes, for they are very handy tools to



Fig. 2.—Crane-necked Hoe.

use in seed beds or for thinning crops. The largest size is not more than 18 inches long, with a short wooden handle of about 6 inches. The handle and neck are made of iron, and the blade of iron and steel, about 3 inches wide. They are to be used with one hand only. An active man will take one of these tools in his right hand and roughly thin-out the bulk of a row of Turnips or Carrots, and complete the thinning by means of his left hand with remarkable speed.

The *Adjustable Hoe* (fig. 3) is a draw hoe and thrust hoe

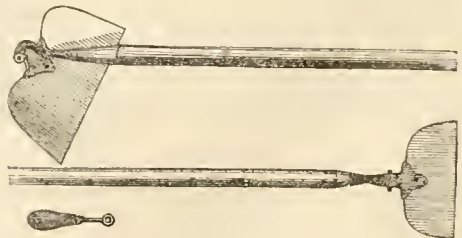


Fig. 3.—Adjustable Hoe.

combined. The plate is deep and strong, very similar in shape to what is made by local blacksmiths for use in heavy soils, but this tool it possesses the great merit of a contrivance to set the plate at an angle to go deep or shallow. It is very con-

venient, but it is not in general use. As a thrust hoe it is useful in hard-bound soils for eradicating weeds.

Fig. 4 is another combination, having all its edges sharpened,

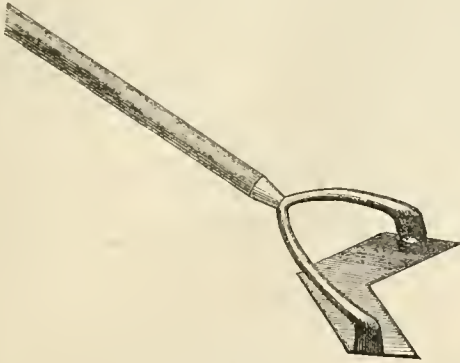


Fig. 4.—Draw-and-thrust Hoe.

and is used either as a draw or thrust hoe. I have used this sort of hoe when living in Suffolk, and a man can easily go over a large space of ground in a short time. Hoes of this description are principally used for killing weeds and loosening the surface of the soil.

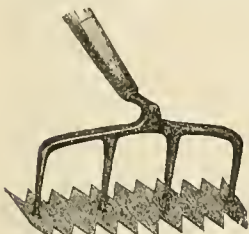


Fig. 5.—Scuffle Hoe.

The *Scuffle Hoe* (fig. 5) is a very handy tool, and although it is sometimes used as a weed-destroyer, it is more employed for reducing the coarse surface of the soil previous to planting, as for Cauliflower or Cabbage beds and the like, or to go over the soil before using the rake, and for stirring flower-beds before planting. It is a light easily-used tool about a foot or more in length and 14 inches wide, with sharp-edged teeth on both sides.

Figs. 6 and 7 are *Drill Hoes*. There are two or three sizes of these. They are mostly triangular-shaped curved-faced tools, some of them with the shoulders rounded-off, making them heart-shaped, with a socket to secure the handle, and a thin, curved iron neck. They are necessary implements in well-



Fig. 6.—Drill Hoe.



Fig. 7.—Double-edged Prussian Hoe.

worked soils, leaving the drills even in width and of uniform depth. Their length varies from 4 to 6 or 7 inches. The double-edged Prussian Hoe (fig. 7) serves not only to destroy the weeds, but leaves the ground level, thus obviating the use of the rake.

Another excellent drill hoe I saw in use the other day in a market garden in this neighbourhood. It is made stout and strong enough of wood, excepting the teeth or hoes, which are of iron. It is of the shape of a hay-rake, and nearly as wide and long. The hoe blades are similar to fig. 6, but narrower and an inch longer, slightly curving inwards towards the operator. The hoes are fastened to the woodwork by a nut screwed on at the top. The handle is fixed on in the same way as for the hay-rake. The merit claimed for this tool is that three drills can be drawn at once. There is a double one

of similar construction also in use. Now if these hoes are serviceable to the market gardener, they will be equally so for others, and will, doubtless, save valuable time and trouble.

The *Drag Hoe* (fig. 8) is not, I think, in general use, but it should be so, for it is quite as necessary to expedite work as some others. Its construction is a horizontal iron bar attached

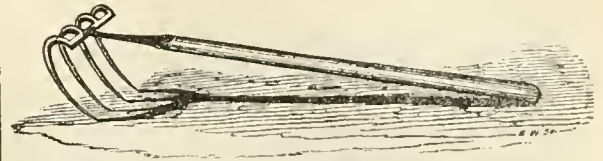


Fig. 8.—Drag Hoe.

to a socket for the handle. It is much like one of the steel digging forks reversed, only the prongs have a much greater curve. It is used principally in collecting from the ground the refuse of any crop, and for that is very handy, as well as for other purposes.

Dutch or Thrust Hoes.—I am not acquainted with more than two forms of these. The better of the two is a thin straight plate of iron and steel attached to a bow of iron, with a socket in which to fasten the handle; the plate is set at a suitable angle for a person to stand upright when using it. These hoes are made in sizes varying from 4 to 8 inches or more in width, and are used either for loosening the soil or killing weeds. They are easy to work, and are generally used. The others simply vary in the shape of the plate; some have a pointed instead of a square front edge, others a square plate, with all the edges sharpened; but in my opinion there is no advantage in these, therefore I will not further illustrate them.

Prong Hoes.—I come now to another section of hoes. The first is the *Guernsey Prong* (fig. 9). It is very much in the shape of a hammer, about 8 or 10 inches long, attached to a handle 4 or 5 feet long. One end is made in the shape of a chisel, and the prongs are flattened and sharpened in the same way, only slightly curved. These tools are excellent for eradicating deep-rooted weeds. The farmers use the same sort of tool in their Turnip fields to tear up the roots of Turnips left in the ground by the sheep.

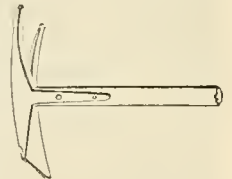


Fig. 9.—Guernsey Prong.

Next, there are the double and treble-pronged hoes. I think they may not inappropriately be called digging hoes, for they are made stronger, and are used for a much heavier kind of work than any of the others before described. I have not seen them so much used as in this part of the country. The two-pronged one is about 5 inches wide, and 8 or 9 inches long, with chisel-shaped prongs tolerably sharp, steeled at the ends, and there is an iron eye at the top for the handle, which is 4 or 5 feet long. The three-pronged hoe is made in a similar way, and is about 7 or 8 inches wide. These tools are capable of penetrating the earth to a considerable depth and loosening it about the roots of crops, or of preparing soil for planting after digging. They are handy tools in any garden, and may be used for several purposes. Farmers likewise patronise this tool for cleaning their hedgerows, as it is not easily put out of order, and when the prongs become worn down they may be relaid or steeled again, and be as good as new. They will last for years.

The above is a description of the most-approved forms of hoes in use at the present time that I am acquainted with. Other forms and shapes might have been illustrated, but for construction and utility they are not equal to those described. If any person having a hoe of distinct merit will kindly add to my list he will be doing a service.

Now for a word or two about the handles. These should not be too long; from 4 to 5 feet, according to size, is a fair length, and allows room for a convenient shifting of the hand; neither should the handles be too heavy, otherwise they are burdensome to the operator. Generally the size and strength of the tool, and the sort of work for which it is made, will be a good guide to the size and strength of the handle to be furnished. The handles for the smaller kinds of draw hoes, as well as Dutch hoes, may be made of good deal of wood; but the tools for heavier work, such as the double and treble prongs

and the Guernsey hoe, may be furnished with handles of quartered maiden ash; this wood when well seasoned is lasting, strong, and tough, as well as comfortable for the hand to grasp, which is not the least important part in the working of tools; for if a workman has an uncomfortable-working tool his energy for work is diminished, and he sooner becomes wearied.—
THOMAS RECORD.

ROYAL HORTICULTURAL SOCIETY.

MAX 7TH AND 8TH.

THE ROSE and Azalea Show commenced at South Kensington yesterday, and will be continued to-day. Never there nor, perhaps, anywhere else has there been such an assemblage of magnificent pot Roses as is there to be seen; larger competitions we have often known even at this season, but, as a whole, never finer. The plants perfect in symmetry, the flowers the perfection of size and colour, and withal exquisite in their freshness, what is there left to desire but their possession? But there is not simply the Society's Rose Show, added to it is Mr. W. Paul's Show, in which Roses are nobly represented in their multitudinous varieties, and the two combine to make one of the finest floral displays of one flower ever seen. Unfortunately, on the opening day the weather in the afternoon was far from propitious.

In the nurserymen's class for twelve Roses in pots two magnificent collections are shown. That which comes from Mr. Turner, of Slough, and which took the first prize, consists of specimens which have certainly not been surpassed, if, indeed, equalled. Charles Lawson, measuring 6 feet in diameter and about the same in height, is covered from below the rim of the pot to the top with flowers averaging nearly 4 inches in diameter. Paul Perras is about the same size, and equally splendid. The remainder of the collection consists of fine examples of *Souvenir de Malmaison*, *Souvenir d'un Ami*, *Général Jacqueminot*, *Alfred Colomb*, *Madame de St. Joseph*, *Paul Verdier*, *Victor Verdier*, *Céline Forestier*, *Beauty of Waltham*, and a splendid plant of *Anna Alexieff*. From Messrs. Paul & Son, of Cheshunt, who are second, come fine specimens of *Souvenir d'un Ami*, *Madame Thérèse Levet*, *Dr. Andry*, *Victor Verdier*, *Anna Alexieff*, *Marie Baumann*, *Madame Victor Verdier*, *Juno*, *John Hopper*, *Horace Vernet*, and *Elie Morcl*. These plants, though not so large as some of Mr. Turner's, are very evenly matched in size and full of flower.

In the class for six Roses in pots Mr. Turner is also first, showing, among others, beautiful specimens of *La France* and *Madame Thérèse Levet*, and a very large plant of *John Hopper*.

In the amateurs' class for three Roses Mr. Ellis, gardener to J. Galsworthy, Esq., Coombe Warren, Kingston, takes the first place; and Mr. James, gardener to W. F. Watson, Esq., Isleworth, the second.

For twenty new Roses, the prizetakers are Messrs. Paul and Son, Mr. Turner, and Messrs. Veitch. The best appear to be *Tea Marie Van Houtte*, lemon, beautiful in bud; *Perfection de Montplaisir*, pale yellow; *Cheshunt Hybrid*, *Etienne Levet*, *Lyonnaise*, *Baronne Louise Uxkull*, *Coquette des Blanchés*, a white Hybrid Perpetual, and *Madame George Schwartz*. *Maxime de la Rochetierie*, full, maroon crimson, as well as several of the preceding received certificates.

Of greenhouse Azaleas there is a very good show, and on the whole there is less of that stiff crotched style so much complained of in former years. The tendency seems now to be in favour of a looser style, and there is more foliage seen.

In the nurserymen's class for nine Azaleas Mr. Turner, Slough, is second with a lot comprising round-headed dwarf standards and bush-formed plants in good bloom. For six, among amateurs Mr. J. Herrington, Thornton Road, Clapham Park, is first with tall pyramidal plants of *Indica alba*, *Rubra plena*, and others very well bloomed. Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park, has a second prize for large plants of *Apollo*, *Wooler*, *Stanleyana*, and others in fine bloom. Mr. Hill, gardener to H. Taylor, Esq., Avenue Road, Regent's Park, is third. In the nurserymen's class Messrs. Dobson, Isleworth, have a second prize. For three (amateurs) Mr. J. Ward, gardener to F. G. Wilkins, Esq., Leyton, is first with splendid bushes of *Duc de Nassau*, *Louise Margottin*, and *Sinensis*; Mr. Wheeler being second; and in the class for the same number, open only to those who had not previously taken a prize for Azaleas, Mr. Ward is first with *Flower of the Day* and *Madame Millez*, white, and *Sinensis*. Second comes Mr. Slogrove, gardener to W. Tyser, Esq., Reigate; and third prizes are taken by Mr. Marcham, gardener to E. Oates, Esq., Iver; and Mr. Rowe, Roehampton. The best single specimen is a fine bushy plant of upwards of 5 feet in diameter, and a mass of white blossom, shown by Mr. Turner; *Criterion* from Mr. Cole is second, and Mr. Ellis is third.

Of Auriculas, there is a numerous exhibition, and superior in quality to that of a fortnight ago. For twelve show kinds Mr. Turner, of Slough, is first, with Rev. F. D. Horner, Topsy, Arabella, Alderman Wisbey, Mrs. Marsden Gibson, Col. Champneys (very fine), Cantab, Lovely Ann, John Waterston, Charles Perry, Apollo, and Richard Headly. The Rev. H. H. Dombrain, Westwell Vicarage, Ashford, is second, and Mr. James, Isleworth, is third. For six Rev. H. H. Dombrain and Mr. James are respectively first and second. For twelve Alpines the honours go to Mr. Turner, Mr. James, and Messrs. Dobson. Mr. Turner exhibits a numerous and very fine collection of show and alpine kinds in the miscellaneous class, for which an extra prize was given.

Of herbaceous Calceolarias, the best group of six comes from Mr. James—these are of a very fine strain. The second honours go to Messrs. Dobson & Sons.

In the remaining classes Mr. Ward, gardener to F. G. Wilkins, Esq., takes the first prize for six Orchids with fine potsful of *Phalenopsis grandiflora*, *Cypripedium villosum* with fourteen flowers, *Odontoglossum Phalenopsis*, and *Dendrobium Farmeri*. Mr. Denning, gardener to Lord Londeshorough, Norbiton, is second in the same class with *Cyrtopodium punctatum* having two grand compact spikes, *Cattleya Mendellii* with lovely white, orange, and purple flowers, and *Dendrobium infundibulum* covered with white and orange blossom. Mr. Bull is third. For six *Lycastes* the prizes go to Messrs. Ward and G. Wheeler, the former in particular having excellent examples of varieties of *Lycaste Skinneri*. For Mr. Peacock's prizes for Agaves, Aloes, and Cacti there was no competition. Several boxes of beautiful cut Roses are shown by Messrs. Paul & Son, Turner, and others, the first-named firm taking the first position.

Messrs. Carter & Co. offered prizes for their First Crop Pea. Mr. T. Farrow, Brigadier Hill Gardens, Enfield, took the first prize. The other competitor was Mr. G. Brown, gardener to E. Mackenzie, Esq., Fawley Court, Henley, who was awarded a second prize.

The subjects exhibited in the miscellaneous class are numerous, and several extra prizes were awarded, as will be seen from the official list in another column. Mr. J. Aldous, Gloucester Road, South Kensington, sends a nice group of flowering and fine-foliaged plants; Mr. Denning, gardener to Lord Londeshorough, a group of very choice Orchids, containing *Vanda Parishii* with sepals and petals pale yellow, spotted brown, lip rosy purple (this had a first-class certificate from the Floral Committee), *Aërides Veitchii* with a handsome spike having ten branches, and *Masdevallia Harryana*. Messrs. W. Rollinson and Sons, Tooting, have a choice group of Orchids and hardwooded flowering plants; Messrs. F. & A. Smith, Dulwich, a group of Azaleas and Heaths; Mr. J. Welch, Hollycombe Gardens, Liphook, a group of plants of *Habrothamnus Hawkshawiana* with beautiful variegation; Mr. G. Wheeler, gardener to Sir F. H. Goldsmid, Bart., St. John's Lodge, Regent's Park, exhibits a choice group of stove and greenhouse plants; and Mr. C. Noble a splendid group of his hybrid Clematis, which have been noticed in detail in previous reports.

From Messrs. Veitch, of Chelsea, comes a fine basket of *Spirea palmata*, one of the most elegant and effective of crimson-flowered plants, and moreover hardy. Mr. Bull has *Cochlostema Jacobianum*, one of the best of our recent introductions, in fine bloom; also a miscellaneous group of Palms and fine-foliaged plants. Groups of spring-flowering plants, Show, Fancy, and Bedding Pansies, and Succulents come from Mr. Ware, of Tottenham. Messrs. E. G. Henderson exhibit a group of their useful Perpetual Carnations, also *Caladium Albert Victor*, which had a first-class certificate from the Floral Committee. From Mr. James, Messrs. Dobson, and Mr. Bragg, of Slough, come also several collections of Show, Bedding, and other Pansies. Mr. Goddard, gardener to A. Chancellor, Esq., Richmond, sends a number of Polyanthus and cut flowers of *Narcissi* in competition for Mrs. Lloyd Wynne's and Messrs. Barr & Sugden's prizes, are exhibited by Miss Florence Barr, Tooting, and Mr. Ware. Mr. Lacy sends a collection of *Cinéraires*; and Mr. Pestrige, Uxbridge, a group of *Tricolor Pelargoniums*. Mr. C. Bachhoffer, 41, Hatton Garden, exhibits flower-vase and Hyacinth glass-holders, ornamental as well as cheap. These we hope to notice more fully hereafter.

FRUIT COMMITTEE.—Alfred Smee, Esq., F.R.S., in the chair. Messrs. Watts & Son, Northampton, sent specimens of Northampton Hero Broccoli, which was considered to be not superior to other varieties already in cultivation. Messrs. Waite, Burnell, Huggins, & Co. sent specimens of Yorkshire Hero Broccoli, a good close-headed variety, but with no merit superior to other varieties. Mr. A. Parsons, of Danesbury Park, sent Lander's Prot ecting Late White Goshen Broccoli, a good large variety. Messrs. Hurst & Son, Leadenhall Street, sent Minor's Improved Raby Cucumber, a variety not approved of by the Committee. Mr. Jones, Royal Gardens, Frogmore, sent fruit of the Hedsor Cucumber. Mr. Frederick Perkins, Leamington, again exhibited his Leamington Broccoli, which was admired for the protecting

character of the leaves, which shade the head from the effects of light.

Mr. Coles, gardener to W. K. Wigram, Esq., The Chestnuts, St. Margarets, Twickenham, sent a remarkably fine dish of *Bourré de Rance* Pears, well kept, well ripened, and of good flavour. A cultural commendation was unanimously awarded. Mr. Gardiner, gardener to E. P. Shirley, Esq., Lower Ealing-ton Park, Stratford-on-Avon, sent a collection of Apples, to which a cultural commendation was awarded. Mr. Jones, Royal Gardens, Frogmore, sent dishes of Black Hamburg and Buckland Sweetwater from pot Vines one year old. These were excellent examples of early forcing, and received a cultural commendation. Mr. W. S. Stevens, gardener to J. B. B. Elliott, Esq., Chesterford Park, Essex, exhibited a dish of Strawberries, to which a cultural commendation was awarded. A similar award was made to a dish of Dr. Hogg Strawberries, sent by Mr. Hopper, gardener to E. D. Lee, Esq., Hartwell House, Bucks, which were universally admired for the meritorious culture bestowed upon them.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. Messrs. Veitch exhibited a plant of the anxiously-looked-for *Odontoglossum vexillarium*. It had two spikes with four flowers on each, of a lovely pale but pleasing rose, white at the base of the lip; flowers $3\frac{1}{2}$ inches long by $2\frac{1}{2}$ across. It is an introduction from Antioquia, and succeeds well with *O. citrosimum*, *O. Phalenopsis*, &c. The Messrs. Veitch expect to have a plant with two spikes and six flowers on each for the first show in June. This received a first-class certificate, and is decidedly the finest Orchid introduced of late years, though in intensity of colour it must yield to the brilliant *Masdevallias*. From the same firm came also *Azalea Triomphe de Wondelghem*, a free-flowering variety with large semi-double salmon red flowers; this received a first-class certificate, as also did *Phoenix rupicola*, a species with handsome deep green recurved leaves. *Platyloma brachypterum*, a small-growing species with very neat, pale green, deeply-divided fronds, had likewise a first-class certificate, as well as *Platyloma bellum*, a very nearly allied kind with smaller fronds. To *Sempervivum triste*, a very neat semi-tufted species with dull purple leaves red at the base, a first-class certificate was likewise given.

Mr. Denning, gardener to Lord Lonsborough, sent a very fine form of *Masdevallia Harryana*, the flower rich glowing crimson. It received a first-class certificate.

Mr. C. Turner, The Royal Nurseries, Slough, sent six new *Azaleas*. *Apollo*, a large waxy-white red-striped flower, received a first-class certificate. The Rev. H. H. Dombtrain, Westwell Vicarage, sent *Auricula* C. E. Brown, raised by Mr. Headley, and which is a very fine grey-edged flower. A first-class certificate was awarded.

Mr. W. Bull sent the following, which had first-class certificates, *Celax jugosus*, creamy-white petals, the sepals and lip densely spotted with bluish purple; and *Begonia Sunrise*, a variety with rosy-red flowers. Besides the above he had *Gongora porterosa*, and *Polycynis lepidia*, with very peculiar spikes of flowers. *Zonal Pelargonium White Clipper* came from Mr. Must. The flowers are well-shaped, and the trusses thrown well above the foliage. It received a first-class certificate. Dr. Denny, who exhibited the preceding for Mr. Must, sent two splendid seedlings, the one scarlet and the other scarlet beautifully tinged with magenta, having flowers 2 inches in diameter. As these were not entered they had to be passed over.

Odontoglossum Phalenopsis was sent by Mr. T. Hubbersty, Bridge Hall, Bury; this was a magnificent specimen, which received a cultural commendation. Messrs. Veitch, of Chelsea, sent fine varieties of *Odontoglossum Alexandræ* and *O. Pescatorei*; a magnificent specimen of *Epidendrum cnemidophorum*, and a particularly well-flowered specimen of *Camarotis purpurea*, which had twelve spikes of delicate rose-tinted flowers. The plant was trained to an upright raft of teak wood. *Athyrium Filix-femina virgatum*, a nicely tufted species, was sent by Mr. J. Chambers, gardener to J. Lawrence, Esq., Beddington, Surrey. The same exhibitor sent a box of cut flowers. Messrs. F. & A. Smith sent *Pelargonium Digby Graud*, a free-flowering variety, which will be useful for cutting from. Mr. Webster, Gordon Castle, sent a collection of hybrid *Echeverias*. A collection of the different varieties of *Mignonette* was sent from the Society's gardens at Chiswick.

FUNERAL FLOWERS IN NEW YORK.—In all our large cities flowers form a large source of revenue to florists who make bouquets, &c., a speciality. In New York, the aggregate sum spent yearly on flowers is immense. Upon funeral flowers, especially, large sums are expended. The following will show the prices paid for leading sorts in winter: The price of a handsome basket is from five to fifty dollars. Bouquets can be made at from three to twenty-five dollars. Single Rosebuds cost twenty-five cents, and Carnations twenty cents.

Smilax is sold at one dollar a yard, and *Violets* by the dozen at twelve cents. One spray of *Lilies of the Valley* costs twenty-five cents.—(*Horticulturist*.)

MR. WILLIAM PAUL'S SHOW OF ROSES AND HARDY PICTORIAL TREES AND SHRUBS.

As previously announced in our columns, this commenced on Saturday last, and will continue open to inspection until the 10th inst. The place of exhibition is this year not the Crystal Palace, but the Gardens of the Royal Horticultural Society, at South Kensington. There, in the large tent where the great summer shows are held, is arranged the grandest collection of pot Roses we have ever seen, and interspersed among these, and elsewhere grouped, are *Laurustinus*, *Hollies*, *Yews*, *Golden-leaved Oaks*, *Acer Negundo variegatum*, variegated Elms, pyramidal *Ivies*, here and there a *Palm*, in the centre circle an *Araucaria excelsa*, and round the sides *Euonymuses*, *Tricolor Pelargoniums*, *Clematises*, and *Lily of the Valley*, while at various parts of the picture standard *Rhododendrons* and *Double Crimson Thorns* come in with telling effect. The terraced turf banks never looked more verdant than they do now, and the natural effect of the complementary colour to the many shades of red, predominant among the *Roses* which form the leading feature, is to enhance their brightness, though indeed they need no borrowed light, for never have we seen *Roses* fresher and brighter. *Roses* there are in large specimens, such as we are familiar with at the tournaments between the great growers, and *Roses* in compact little bushes densely clustered with blooms, or bearing fewer flowers of a size that seems almost incredible. We are not going to inflict on our readers a long list of names, of which they will find ample store in another report; the old favourites and the new aspirants to fame are both freely and well represented.

Among the deliciously-scented *Tea Roses*, the rich yellow *Madame Falcet*, the delicately rose-tinted white and ever-beautiful *Alba rosea*; *Mlle. Cécile Berthod*, sulphur; *Perfection de Montplaisir*, pale sulphur yellow, blooming in clusters like a *Noisette*; *Adrienne Christophle*, yellow suffused with coppery crimson; and *Madame de St. Joseph*, another deep-coloured *Rose*, are especially conspicuous. That fine old *Bourbon*, *Souvenir de Malmaison*, is magnificently bloomed in several examples; while of *Hybrid Perpetuals*, *Duke of Edinburgh*, *Mlle. Marie Rady*, *Mlle. Eugénie Verdier*, *Lord Napier*, *Marquise de Castellane*, *Marquise de Mortemarte*, *Princess Christian*, *La France*, *Cœur de Lion*, *Etienne Levet*, *Lyonnais*, and many others there are numerous finely bloomed plants. *Princess Christian*, which we believe we were the first to call attention, is truly magnificent. It not merely maintains all that has been predicted of it, it has surpassed all that could have been conjectured. Mr. William Paul has brought a garden of *Roses* to the very doors of the London dweller; let us hope that it will not be allowed "to blush unseen, and waste its sweetness on the desert air."

NEW PICOTEEES.

"WHAT a fine lot of new *Picotees* were shown this year!" So I wrote to one of our oldest florists, the Rev. C. Fellowes, of Shottesham, near Norwich. "Yes," was his reply; "but never, perhaps, again shall we have such a year for saving seed as we had two years ago." Indeed, I think Mr. Norman, of Woolwich, another very successful grower, said he had saved that year nearly a pound weight of seed. Certainly never have so many fine varieties been exhibited or received so many certificates, while to all appearance they are robust in habit.

It is a great pity that this lovely flower is not more cultivated in the neighbourhood of the metropolis than it is. In other parts of the country—at Oxford, Bath, and in the north—it is very extensively grown, but the growers of it in or near London are very few. Days are altered since the great competitions that used to take place rivalled almost the northern exhibitions, and the comparatively easier work of bedding-out has eclipsed this and many another florists' flower. As it is now a good time to obtain the new varieties, I would briefly notice these which Mr. Turner, of Slough, is now sending out.

Alliance (Fellowes).—A heavy bright purple-edged flower. The petals are broad, the white pure, and the size large.

Bertie (Turner).—One of the medium red-edged flowers. Very fine, and a good grower.

Chanticleer (Fellowes).—A flower of good substance, with heavy purple edge.

Ensign (Fellowes).—Large, full, heavy red-edged flower, and a good grower.

Edith Dombrai (Turner).—One of the most distinct flowers that has been raised of late years, the colour a beautiful soft magenta rose, heavy edge. It has been deservedly certificated both at the Crystal Palace and Royal Horticultural Society, and will be a universal favourite with all Picotee growers.

Edith (Fellowes).—Medium purple, full flower.

Juliana (Turner).—A splendidly coloured, heavy-edged, scarlet flower, petals smooth. The edge has no bar whatever, and in every respect is first-rate.

Mrs. Hornby (Turner).—A narrow red-edged flower of fine quality; the white remarkably pure, and, as far as my judgment goes, the best narrow-edged flower we have.

Miss Small (Fellowes).—Red edge, heavily marked; white pure, petals large and smooth, and the habit excellent.

Mrs. Keynes (Fellowes).—Pure white, the edge medium depth; petals broad and smooth.

Medina (Fellowes).—Heavy bright edge of lively purple.

Mrs. Fordham (Turner).—Rose-edged, medium depth; petals large and smooth. The flower is full and very beautiful.

Norfolk Beauty (Fellowes).—A very distinct flower, heavily edged with purple of a beautiful violet shade. Flower not so large as many, but at the same time a very desirable variety.

Princess of Wales (Fellowes).—A remarkably fine heavy-edged purple flower, very large and full; and fine as *Admiral* is, I believe that this will be considered a still more beautiful flower.

Sylvia (Fellowes).—Heavy red-edged flower, but not equal, I think, to *Miss Small*.

It will be seen that two of our most famous raisers have contributed to this new batch, and their names alone would be a sufficient guarantee of excellence; but as I have had the opportunity of seeing the flowers, and indeed of naming some of them, I can avouch that they are the finest set of Picotees ever sent out at any one time; and in this judgment I am confirmed, not merely by the fact of the numerous certificates they have received, but by the judgment of many who have grown this lovely flower for many years.—D., *Deal*.

REARING CALCEOLARIA PLANTS.

I FORWARD a few of my *Calceolarias* from cuttings put-in in a cold frame during the first week of November. They have been aired to the freezing point, and this year only covered with the lights, even when we had 16° of frost.

I have this day (April 30th), planted out my stock, forking the borders well, opening the soil with the trowel, and inserting the plants. A little fine soil was placed about them, and then was given a regular swill of water, which they wanted, for I kept them dry purposely. I then closed the soil around them, leaving the tops 2 or 3 inches above ground. I prefer shaking out the plants and giving them a free root-run into better soil than that in which they have been struck; and if no rain come, the syringe will help them along, sun or no sun. They are wet enough at the roots at present. The two small plants are from the shrubbery, put in unprepared and left to themselves. They are in any case rendered very hardy from the cutting stage, but become less so after growth has commenced. Fancy a fine plant early in March coddled till June, shifted with a ball (a trouble), roots near the surface, and two days' hot sun—the result is too well known. I shall be surprised if my plants be not in good health and well rooted up the stems, and they will give some better result than cutting over and one crop of bloom—viz., bloom in all weathers from July to November.—CHARLES PRINSEP, *Goldthorn Hill*.

[The plants are sturdy and full of growth.—Ebs.]

FLOWERS FOR OUR BORDERS.—No. 6.

DEUTZIA GRACILIS.—SLENDER DEUTZIA.

AMONGST shrubs of a deciduous nature perhaps one of the most interesting is the elegant little *Deutzia gracilis*; its graceful habit, the abundance of its snow-white flowers, and the readiness with which they are yielded even by very small plants, entitle it to rank with deciduous shrubs of the first class. The free-flowering habit of this and one or two other species is indeed so remarkable, that a cutting of the young wood struck in summer will produce flowers in the following spring, when the plant is but a few inches high; and facilities are thus afforded for their cultivation in pots, which greatly enhances their value.

The genus *Deutzia*, originally represented in our gardens by *scabra* only, now includes at least seven additional species—viz., *crenata*, *canescens*, *sanguinea*, *undulata*, *corymbosa*, *staminea*, and *gracilis*, all hardy, white-flowered, deciduous shrubs. The best known, and we may add one of the most valuable, is the *D. scabra*, so named from the asperities of the leaves; its habit is more robust than that of *gracilis*, and its foliage and flowers of a larger size. *Crenata* is a fine species, of somewhat taller growth than the preceding, with which it is sometimes confounded; it may be distinguished by its larger flowers, and by the teeth at the margin of the leaves being rounded, or crenate, those of *scabra* are sharp and saw-like; this species is not much cultivated at present, at least in this country. *Canescens* is so named from the branches and under-surface of the leaves being covered with a whitish down; of its merits we know but little. *Staminea* is an abundant flowerer, but is somewhat dwarfer than those we have mentioned.



Deutzia gracilis.

Corymbosa was highly spoken of at its first introduction, but it has proved a shy bloomer, which is the more to be regretted, as its flowers are very sweet-scented. With *sanguinea* and *undulata* we are acquainted only by name; that of the first alludes rather to the reddish purple colour of the ripened shoots than to the tint of the flowers, which are, we believe, white, like those of the other species.

From those now enumerated, *gracilis* differs in nothing but its slender habit; its foliage is more acute than that of *scabra*, and is entirely destitute of the roughness peculiar to that species and *crenata*. The utmost height it will attain we are ignorant of, as most of the specimens are yet small; but it will, probably, not exceed 3 or 4 feet. Its cultivation, whether in pots or the open ground, is of the simplest character, the chief point requiring notice being the mode in which the shrub is pruned. All the *Deutzias* produce their flowers on the wood of the previous year; if, therefore, the ordinary mode of shortening the shoots were adopted, most of the flower-buds would be pruned off; the young shoots should therefore be left untouched, but the old wood must be thinned out in autumn, as well as all cross shoots which interfere with the regularity of its growth. The taller-growing species, such as *scabra* and *crenata*, may be trained to a single stem, all suckers and the lower shoots being cut away.

Where there is a choice of soils, a mixture of peat and loam will be found to suit not only *gracilis*, but all the species; in the absence of these, any good friable soil, in a well-drained site, may be used. Increase may be effected, either by layers, or cuttings of the half-ripened wood under a hand-glass, in the open border; a slight bottom heat will be advisable when the cutting is not taken until late in the season. Most of the

species throw up suckers, which offer a ready mode of increase, and it is probable that *gracilis* may be multiplied in the same way. In the open ground this species flowers about the beginning of June; but when grown as a pot plant, it may be had in bloom at almost any period of the winter and spring, where there are facilities for forcing. With no better accommodation than that afforded by a good window, it might easily be made to yield its flowers six weeks earlier than in the open borders. The temperature of an ordinary apartment will be sufficient to excite it into growth; but it must be confessed that the dry atmosphere of a room is somewhat injurious, both to the foliage and flowers; it should, therefore, when in bloom, be kept cool and moist. Specimens cultivated in pots should be repotted after flowering, and exposed during summer and autumn in the open air; they will require to be pruned in the manner explained for the larger plants.

The *Deutzias* are very closely allied to the genus *Philadelphus*, of which one species, the common *Syringa*, or Mock Orange (*P. coronarius*), is generally found in the shrubbery. In the *Syringas*, the sepals and petals are each four; the stamens numerous (more than twenty), and the style one; in *Deutzia*, both sepals and petals are five in number, the stamens ten, and the styles three; there are, therefore, abundant marks of distinction. The stamens are alternately longer, the shortest being opposite the petals, and all of them are curiously winged and somewhat forked at the summit, or rather three-toothed; the anther being seated on the central tooth; in *D. staminea*, this peculiarity is so marked, as to have suggested the specific name, broad-stamened. Nor is this the only noticeable feature, for a close examination will reveal the presence of a yellowish ring within the circle formed by the stamens, termed by botanists the disk.

The leaves of *scabra* are remarkable for their roughness, and under the microscope this is seen to be owing to hairs of a stellate form, which are supported upon a short stem, the whole presenting a mushroom-like appearance. According to the Dutch botanist Kämpfer, the wood of this species is much prized by the Japanese cabinet makers for making pegs of the finest quality, it being very hard and tough. And if, gentle reader, you may chance to be of the fair sex, it will, perhaps, interest you to know, that when Orange blossoms are scarce, the flowers of the same species may be employed as a substitute in the formation of the bridal wreath—a hint for which we expect nothing less than a pair of white gloves.

To complete our sketch of these interesting shrubs, we have only to add, first, that *gracilis*, and most of the species are natives of Japan and China; *corymbosa* and *staminea* are from the Himalaya; secondly, that the not very euphonious generic appellation was conferred in honour of a Dutch patron of botany, John Deutz, of Amsterdam. — (W. THOMPSON'S *English Flower Garden*.)

SHEPHERDIA ARGENTEA AND OTHER BERRY-BEARING SHRUBS.

I HAVE just read your notice of *Shepherdia argentea* with great interest, as I have a large bush of it nearly twenty years old. I am glad that people have an English name for it, as I dislike unnecessary pedantry. I had some doubts about the fact of its bearing fruit till I saw it confirmed in page 334. My plant is 6 feet high and the same across, and has been frequently trimmed-in. It grows very much in habit like a Lilac bush, and stools-out in the same manner, from which, no doubt, plenty of suckers or layers might be obtained. It is perfectly hardy, and has not had a twig browned during the late terrible spring, which has blown away nearly every Strawberry in the country, and blighted, as with a flame of fire, common Ivy and Holly.

My *Shepherdia* produces every season an abundance of small flowers about the size of those of the Elder tribe; but these have never been succeeded by any appearance of fruit. I have noticed several other specimens of the plant in public pleasure grounds, but never in fruit. Is it possible that we have hitherto only had a plant of one sex?—perhaps the barren female—as was the case with the spotted *Aucuba*, which never fruited till a few years ago, when we got the male plant from Japan. As the *Shepherdia* has been in the trade for many years, I hope some of our leading firms will give us information whether they have had it in fruit. I think not, or I must have seen it.

These remarks apply as well to the *Ruscus* (Butcher's Broom). When I lived in London, eating my terms for the bar, I re-

member well the branches of it, which were used to decorate shops at Christmas time, bore a bright red berry, and children buying such in Covent Garden used to ask for "a piece of Christmas." It had such a lively appearance that I procured a great many plants of which I have large patches in my grounds. They have never fruited, and nurserymen about here tell me that it does not bear a berry at all, but that is quite incorrect. Is it possible that we have hold of barren plants of this shrub also? I have *Ruscus aculeatus*, our native plant, and *R. Hypoglossum*. There are two others in catalogues—viz., *R. Hypophyllum* and *R. racemosus*, sometimes called the Alexandrian Laurel, which I am not familiar with.

To use the *Shepherdia* as a hedge seems to me absurd, except as a screen to conceal some eyesore in summer, as it is very lax in its habit, very tender in texture, and very brittle. The Osage Orange was much puffed as a desirable hedge plant many years ago. I raised a great many from seed. In this country it will only live behind a wall, and grow in a very crooked straggling manner like the *Pyrus japonica*.

I was a very hard-working member of the Acclimatisation Society while it existed, and was very anxious to introduce hardy game birds, such as the prairie fowl, ruffed grouse, &c., instead of cockatoos and kangaroos, and at the same time urged the introduction of berry-bearing shrubs suitable to our climate, and which these birds fed on in their native habitat, but no one but Mr. H. Burr, of Aldermaston, would listen to me. From what I read in botanical works I am quite convinced that there are many plants in the wilds of America which might be introduced here with great advantage both as ornaments and as food for game and other birds.—JACKSON GILLBANKS, *Cumberland*.

P.S.—Since writing the above I have looked into London's "Encyclopædia of Gardening," which states (p. 935) that this shrub (*Hippophaë* of Lin.) is called by the Indians Rabbit-berry and Beef-suet trees, and that it was said to have borne fruit at Loddiges' arboretum; also that the fruit of another variety, *H. rhamnoides*, is much eaten by the Tartars. To show the long duration of winter here, we have still large patches of snow on Skiddaw and the adjacent hills; thick ice every night. Plenty of woodcocks still in the country, though the cuckoo has commenced calling. May 1st, 1873.

[We think it very probable that our correspondent's specimen is barren on account of its being either a male or female plant, as the *Shepherdia* belongs to the Linnæan order Diœcia. We join Mr. Gillbanks in the wish that some of our readers will inform us if they have ever in this country known the *Shepherdia argentea* ripen its fruit in the open air. The *Ruscus* is also a diœcious plant, and may be barren from the same cause. It certainly bears berries in this country when the male and female plants grow near each other.—EDS.]

MALINES.

THE MANSION OF M. F. DE CANNART D'HAMALE, SÉNATEUR.

FROM the earliest days of our gardening history, the city of Malines, in Belgium, has been associated with the study of botany and horticulture. Here it was that Dodoens was born, and resided as physician to the Emperor Maximilian and his son Rudolph II., till, through jealousy, he was compelled to leave the court, retiring to Antwerp, and finally becoming Professor of Botany at Leyden. Here, too, in more recent times resided Major Esperen, devoting his time to the study of pomology, and the raising of new fruits, leaving behind him a name enduring as long as those delicious fruits with which it is associate will last. And here also lives in our own day one of the most prominent patrons of Belgian horticulture and native industry, the Senator M. de Cannart d'Hamale, author of "*Monographie Historique et Littéraire des Lis*," well known and as highly respected wherever European horticulture is found.

In the garden attached to the mansion of M. de Cannart d'Hamale is a collection of plants of much interest. The garden itself is a bijou, of limited extent, but so skilfully and so tastefully designed as to appear considerably larger than it is. Here are cultivated all descriptions of plants, including Orchids, Camellias, Azaleas, Ferns, Palms, and those which are so much admired for their fine foliage. There are five or six glass houses adapted for the different classes of plants, and in all of them we were struck with the tasteful arrangement and the skilful cultivation. In the Grande Serre, which is the prominent object in our second illustration, Ferns and

fine-foliaged plants are grouped so as to produce a charming effect, the whole of the back wall of the house being covered with rockwork, which is clothed with vegetation. The tree represented on the left of this large house is a gigantic pyramid Pear, 30 feet high, a perfect model of that kind of training, but to which our artist has not done anything like justice.



VIEW OF A PORTION OF THE LAKE AND THE LARGE MAGNOLIA.

The collection of large Orange trees in tubs, and which are kept in an orangery in winter, are arranged during summer in various parts of the grounds with admirable effect.

Immediately behind the mansion, of a portion of which our first figure is a representation, there is one of the finest specimens of *Magnolia conspicua* we have ever seen. At the time



VIEW OF GRANDE SERRE.

of our visit it was in full bloom, and formed a great distaff | excellent *Araucaria imbricata* is on the same lawn close ad-
30 feet high covered with its glorious cup-shaped flowers. Au | joining it, and in the small lake are many aquatic plants of

great interest. Here and there in nooks and corners are pieces of statuary, and in prominent positions are to be found busts of Dodoens, Clusius, and other old world botanists and horticulturists whose names and memories M. de Cannart delights to honour.

We have given this general account of a charming town garden, to show how much can be done in a small space, and how much enjoyment and instruction may be concentrated even in the centre of a large city, when there is a mind capable of devising, and a will to carry out so desirable an object.

CONCERNING ROSES.

ONE word about certificates. No Rose should be certificated upon hearsay. It should be a specimen in front of adjudicators. It should not only be a good Rose, but distinct and better than those we have in the same line; and here I must ask permission to thank the French and English raisers for a glorious lot of Roses.

It is not uncommon to hear persons talk of the new Roses as a pack of trash. Such persons do not know how difficult it is to raise a Rose as good as its parent or parents. It might take a man many years to raise as good a Rose as the worst that comes out annually. It is not a nurseryman's work, but that of an ardent, laborious, and most patient amateur. Moreover, it takes four or five years before you can be sure that your seedling is worth anything. Roses grown under glass with solar or fire heat are oftentimes very different in character and attributes from the same Roses grown out of doors. For my part, till Roses are on strong stocks I do not much care to have them. I bought only two last year, from which in my vinery, planted out, I never obtained a flower—viz., Baron de Bonstetten and Baronne Louise Uxkull. The former is now in beautiful bud (eight buds), and the latter, a more growthy plant, promises me three or four buds to judge from. I will then report, but it will be an under-glass report.

I have looked over the lists of novelties of the year, and as far as reading and guess go I think the trump cards will come out of these. *Tea*.—Perle de Lyon, Madame Dr. Jutté. *Noisette*.—Madame Caroline Kuster. *Hybrid Perpetuals*.—Claude Levet, Princess Beatrice, Firebrand, Madame Lacharme, Pierre Seletsky, and Amélie de Pays Bas.

The Roses here (Dorset) have wintered well. I have lost only one Rose out of 1851 plants. I have raised the rosery up to 2060 plants; they are in forward bud. I have just finished the spring pruning. I have cut out many shoots with good buds, as it is not well to take a full crop for the first series. It stops continuous blooming. The Roses here lasted in an unexpanded form till the first Sunday in January. The last four buds, very fine, were cut from M. de Montigny, one of the finest Roses in its line of colour; it is the only Rose of which I can say I never lost one. I had originally, many years since, sixteen plants of it, and they are all alive now and in good condition.

It is good to be "on with the new love before we are off with the old." I have great respect for some of our old Roses which have been given up by some people, such as M. de Montigny, Caroline de Sansal, Baronne Prévost, Triomphe de Paris, La Ville de St. Denis, Gloire de Vitry, Madame Knorr, and W. Griffiths.

"A living dog is better than a dead lion." We want strong growers with hardy constitutions, no others will last any time. Such Roses as Louis XIV., Madame Furtado, Marquise de Mortemart, and some others, are very beautiful and may do under glass, but they will not do outside of it. The two best-constituted Roses in the world are Gloire de Dijon and Jules Margottin; nevertheless, Madame Levet, deep buff, is better than the former, and Edouard Morren is better than the latter. They seem equal to them in other attributes.—W. F. RADCLIFFE.

BALSAM CULTURE.

THE common garden Balsam is now one of the most beautiful of our summer decorative annuals. It is of East Indian origin, consequently tender. Its position should be in the list of subtropicals. It, like most flowers taken in hand by the florist, has been very much improved, and none but the very best strains should be grown. There are still a number of flimsy trashy varieties sold, of lanky habit and indescribable colour, like the bulk of German Ten-week Stocks; therefore the first consideration in starting to grow Balsams is to obtain

good seed; and when a good strain is secured, seed should be saved from picked plants.

It is no great exaggeration to call many of the better varieties Camellia-flowered. The last two years we have had some white flowers that were quite reflexed in the petal, and imbricated, and perfectly double, like Camellia Imbricata, from seed got at a respectable London house; the colours very fine, various shades of red, pink, and almost crimson, white, and mottled, as well as good purples, alongside of which common strains, or indeed no strain at all, would not have been looked at.

The quality of flowers, however, depends much on culture. Under the best management it will be observed that plants which have yielded very fine flowers when in their progressive stages will, when on the wane, produce flowers quite single, though the colours will be still distinct; then is the time to secure seed—to obtain a crop of good plump seed in this climate by planting out a selection of the earliest plants, which have flowered in pots, on a bed of rich soil, in the blaze of the sun in the open air. This is, however, not necessary to seed saving, only it saves labour in watering and house room; and, moreover, a Balsam in a seedly state is not ornamental in-doors. The Balsam should be quickly grown when taken in hand; it requires plenty of sun and air, so that it is not advisable to sow the seed very early in the season. The plants should never be drawn by want of light or room, and not starved for want of pot room if large plants are wanted. A large Balsam can be grown in a comparatively short time under good conditions. A bright sun and plenty of air are essential to mature the growth as it progresses. We therefore do not advise to sow the seed before the first week in April for the first lot; later sown will even be better. As the sun increases in power and the plants in size, air may be given with more freedom with the advancing season.

If seed be scarce, we prefer sowing single seeds in small pots, or, if plentiful, more seeds to the pot, selecting one plant and pinching out the rest. When they are well up, the pots are placed in a dung frame or warm pit near the glass; and at once guard against overmuch moisture and closeness, as the seedlings will get drawn in one day if forgotten or mismanaged. From the beginning the pots would be better plunged in sawdust or tan, thinly, but more especially as the plants advance in size, when more air is given; a steady temperature of from 75° to 80° at the root is immensely in their favour; the top heat may fluctuate very widely without any harm.

If the seeds have been sown in 3-inch pots, the first shift should be into 6-inch, with one large crock over the hole. They should be shifted when the roots have well hold of the ball of soil but not matted. The plants will be by this time short sturdy fellows if they have not been coddled. Some do not mind their being a little long in the stem, as the balls can be kept low in the pots at the time of shifting, and the soil brought up to near the first pair of branches; but we do not advise the practice, because it should not be necessary. When shifted, they must be again plunged, but not in much bottom heat; the heat of the sun on the plunging material, whether sawdust or tan, will be sufficient in May and onwards.

At this first shift it will be necessary to speak of soil. We prefer turfy loam of a sandy nature, which has been stacked for a few months with layers of dung put up with it; the turf will have absorbed the good qualities of the dung. We chop it up rough on the potting bench, and to it we add a third of horse-droppings, which have been prepared for the mushroom house, with the bulk of its good qualities remaining, but sweetened for use; old mushroom dung is poor stuff. If the soil is not sufficiently sandy—that is, if it be of a close texture—a small portion of gritty river sand should be added, or sharp pit sand; fine silver sand is not necessary to such a coarse-rooting plant as the Balsam, although it will do perfectly well. We, however, prefer for coarse-rooted plants a coarser sand. The sand in this instance is not necessary simply to keep the soil open mechanically; sand is necessary, we believe, as a feeder or digester, especially in very rich soils. A plant will sometimes be found not to root in pure dung, but add a portion of sand to the dung, and it roots in it directly. With the above soil the plants may be potted rather firmly.

Increased attention will now be required to air-giving. The plants must have plenty of room, to allow of a free circulation of air about them, and prevent them shading each other—the lights of the pit tilted half way down the side, not top and bottom, to avoid draughts. They will now make very rapid progress and sturdy growth. Water cautiously for a few days after potting, and always with water of the same temperature

as the plunging material. A comfortable condition of the root, not actually bottom heat—as usually employed, that expression is apt to lead astray—but a steady warmth, is one of the most essential points in the culture of tropical and subtropical plants; for although the atmosphere may vary in temperature, there is a steady rise or decline in the heat of the soil with the season in most climates. Watering with cold water is a serious evil with plants in pots, and very soon ruins a Balsam.

The next shift may be into 10-inch or 12-inch pots, if large plants are wanted; 8 or 9-inch pots are large enough for general decorative purposes. If into 10 or 12-inch pots, room should be left for an after top-dressing of dung—sheep's dung we prefer—keeping the plants plunged until they are large enough to be moved into the show house.

Some pick off the early blooms with the view of retarding the general flowering and strengthening the plants, but we do not think there is much gained; if the plants be quickly and liberally grown, this will not be found necessary. If they have been checked or starved for want of room or water, this picking off the blooms will not make up the difference.

Some also pick and tie out the plants. We have done the same, but the Balsam is a stubborn subject under training; it resists it obstinately. If done at all, it must be done with much caution and coaxing, like tying down the young shoots of the Vine when vigorous. A specimen Balsam should be grown without pinching or tying. We think when a Balsam is manipulated in this fashion, its character is spoiled directly.

When the plants are removed from the plunging material to the show house, care must be particularly taken not to over-water, especially if in large pots; yet they must not be allowed to flag. Most of the feeding roots will be near the sides of the pot; water should be given round the circumference rather than close to the stem, where it may be allowed to become comparatively dry. They must never be shaded or crowded, but have plenty of air and no draughts. Plants often sicken off when removed to the greenhouse; this is owing to the check of removal from the plunging material in a highly cultivated subject; hence the caution required in watering.

The Balsam can be grown to a huge size, with attention to potting and growing on. We have seen them in 18-inch pots from 3 to 4 feet through every way, but we never grow them that size. We once saw a Balsam, grown by a cottager and exhibited at one of the leading provincial shows, which was the above size, and was the wonder of many. The first-referred to were about a dozen in number; they were grown in a lean-to house, an old pine stove. The plants were plunged in the pit in front, under the lower sashes of the house, and the upper sliding sashes were entirely wanting; so that the Balsams enjoyed themselves perfectly; abundance of air, no draughts, comfortable at the roots, and the full blaze of the sun. They were grand plants, were neither tied nor pinched, but stiff and short-jointed, the centre stems as thick as a man's wrist.

When the pots are filled with roots after the last shift, and while the plants are still plunged, they may have a little manure water every time. It is needless to say that the Balsam is a gross feeder, and capable of appropriating large quantities of stimulants under a hot sun; but when removed to the show house, manure water must be administered with more caution, and none at all when the weather is dull and wet. A little top dressing is better, as they will root up to the warm surface.—(*The Gardener.*)

HEATING BY THE AID OF A LIME-KILN.

The principle of the system consists in the combination of a lime-kiln and a hot-water apparatus. One method of arranging these I have actually at work, but I can arrange in any way I choose, so long as I manufacture lime and heat the buildings by hot water. I have two apparatus at work here, one in use for the last seven months, the other for three months. The first-named heats three good-sized houses at some distance from each other, and the other heats a range of vineries 200 feet long and 16 feet wide. I use ordinary saddle boilers in both cases, and they are sufficiently powerful for the amount of work which they have to do, but I calculate that with the aid of my improved boiler they could easily do twice the amount of work with the same arrangement. The lime produced fully pays for the fuel, raising the stone, and conveying it to the spot, so that the heat is actually obtained for nothing.

The boiler is placed on the top and built-in in the usual way. All material is put into the kiln at the top and drawn

out at the bottom, just as kilns are usually treated. I may mention that chalk is still better adapted to the purpose than limestone, and that anthracite coal is the best fuel. Coke will also answer well.—JOHN COWAN.

NEW ROSES AT SOUTH KENSINGTON.

FROM "D., *Deal's*," judgment on Roses as well as other things there is seldom any occasion to differ, but with respect to the Floral Committee and Rose Lyonnais I would like to pass a slightly different opinion. Lyonnais has just flowered with me in a cool greenhouse without any forcing. My note of it is, "Light rose, with crimson rose centre, similar in depth and shape of petal to Victor Verdier. It is a larger and fuller flower. A grand Rose." Etienne Levet is a splendid Rose, and as exhibited by Mr. W. Paul, of Waltham Cross, at the Royal Botanic Gardens, it well deserved the first-class certificate it received. Another Rose exhibited at the same time by Mr. Paul, Star of Waltham, will be the star of many gardens for a generation to come. The flowers are of immense depth, of a rosy crimson colour, and the substance of the petals is something remarkable. It is a finely perfumed Rose. It well deserved the first honours it received.

Then, as to the constitution of the Floral Committee. I do not know where a body of more celebrated horticulturists could be found; I may be excused a quotation from an old song—"Gentle shepherd, tell me where." Of course they need no defence. The Rose is represented by a Paul; florists' flowers of the old style by Turner; the Hyacinth by Cutbush; the Pansy, Phlox, Pentstemon, &c., by Laing; stove and greenhouse plants by Baines; Orchids by Pilcher, &c. There may be, and no doubt are, mistakes in awarding certificates, but we may rest assured that the awarding of certificates cannot be left in better hands.—J. DOUGLAS.

EXTRACTS FROM ADDRESS

DELIVERED BEFORE THE GERMANTOWN HORTICULTURAL SOCIETY, BY THE PRESIDENT, JOHN JAY SMITH, Esq.

MANY persons think they are too old to plant. This is an absurdity. Men at even seventy do not hesitate to lay up means for their children; then why not plant for posterity, and why give up to self what was meant for mankind? It is founded on a vulgar error, on mistaken and prejudiced notions. Many trees only ten years planted are known to be between 30 and 40 feet in height. At 30 feet, a tree, practically speaking, will effect all the general purposes for which trees are planted. It will then afford shade and shelter. It will display individuality of beauty and character, and confer expression on landscape scenery, while during all the period of its growth, it will give pleasure and inspire hope. Very many trees bear fruit in a much shorter period than ten years.

The uses of trees is a large subject, on which time will not now permit us to enter. One instance must suffice. There is a variety of *Gleditschia* called *horrida*, which has a tremendous crop of ugly spines attached all over its body, thrice as numerous and dangerous as the triacanthos. It is put to a moral use. When a man has committed a crime against society, he is stripped and sent to the top on a ladder. The ladder being removed, he gets down as well as he can. This mode of punishment is said to be more effectual of reform than even the famed Delaware whipping post, and might be economically substituted.

Our ancestors were too hasty in cutting down. Hence our great problem in America is how to replace what has been ruthlessly wasted. We must provide shelter for the prairies, and with our great stretch of sea coast, we want to know what trees will flourish near salt water, exposed to pitiless winds; and we want information regarding the suitability of different vegetations in our variable climates. All this is being studied and made known. I do not despair of seeing the transactions of the society published, containing such knowledge as this, and much more that our young country is yearning to know. Here is work for a horticultural society to employ its extra means on experiments of world-wide interest.

We see the necessity of the gardener, the horticulturist, the nurseryman and the landscape gardener; for very few will undertake the importation of the plants or trees of each kind required. We must have large magazines of plants, so to speak, from which each can draw his limited supplies.

The landscape gardener is appearing in America wherever his services are demanded. We have good artists among us

in this line, and perhaps a few pretenders. Sir Joseph Paxtons will not be wanting as demand creates supply. His art should always be called in where the best permanent effects are desired. He can tell to what size a tree will attain. Without him a few years must bring into requisition the dreaded axe and the knife. If it is almost as difficult to keep money as to make it, so we may say it is more difficult to know what to plant than to bring numerous specimens together. On the subject of planting it is still well to remember Cicero's advice: "When to build is the question, a man should reflect a great while, and perhaps not build at all; but when to plant, he should not reflect, but plant immediately." Much time is frequently wasted, and years lost, by not commencing with trees the first year your property is in possession.

We must take care that Europeans do not surpass us in new introductions as they have in the skill with which they cultivate what they call "American plants," including one of our greatest and most neglected glories, the Rhododendron. The Yew grows more rapidly here than in England. Suppose our predecessors of two hundred years ago had planted Germantown simply with Cedars of Lebanon, Rhododendrons, and Yews! These alone would have made our district the admiration of the world, and shall we, because they grow but slowly, deprive our successors of the next two hundred years, of this imposing beauty—this joy? London immortalises the planters who introduced Cedars on their domains. A Scotch Duke planted his bleak hills with the Larch, and lived to see ships launched from the timber, and now the Larch plantings are yielding immense profits, from the demand for railroad ties. The Marquis of Blandford, afterwards Duke of Marlborough, did not hesitate to pay enormous prices for everything beautiful, and he is remembered for this single act of bounty to his country, and for this alone. Let us imitate all this.

The advance in horticulture is one of the great triumphs of our age. This period of a few decades has seen the products of the whole world, once unknown and despised, brought to our doors and cultivated. Manufactures and the arts are vastly indebted to the garden for their success. We have employed new grasses for useful purposes, and even subdued the hard trees of the forest for paper.

There can be no man here who is not cheered to-night by the presence of the ladies. Woman's rights are sometimes discussed, but there is at least one right she shall never be deprived of—the right to possess, to control, to work in, and to thoroughly enjoy a garden. They do not require, and do not want defenders. In a new translation of Aristophanes, by an English clergyman named Collins, I find the following free lines from the women's chorus of a Greek play, which run so trippingly, and are so appropriate, that with them I close these hasty remarks, which have already detained you too long. But the subject is really inexhaustible.

Without the presence and approbation of the ladies, no horticultural society, no garden would be attractive. They are the best patrons of the advanced gardener. They are the best of creation, our household gods, in fact the fairest flowers we have, or can hope to see:—

"They're always abusing the women
As a terrible plague to men;
They say we're the root of all evil,
And repeat it again and again.

"Of war, and quarrels, and bloodshed,
All mischief too, be what it may;
And pray, then, why do you marry us,
If we're all the plagues you say?

"And why do you take such care of us,
And keep us so safe at home,
And are never easy a moment
If ever we chance to roam?

"When you ought to be thanking Heaven
That your Plague is out of the way,
You all keep fussing and fretting—
'Where is my Plague to-day?'

"If a Plague peeps out of the window,
Up go the eyes of the men;
If she hides, they all keep staring
Until she looks out again."

—(American Gardener's Monthly.)

NOTES ON HARDY FLOWERS.

Aquilegia aurea.—This is a new introduction from the Rocky Mountains. It is closely related to *A. canadensis*, and in habit of growth, foliage, and height resembles that species.

The flowers are, however, pale straw-coloured; and being a free-flowering plant, it will form a very desirable contrast to the blues and reds of other species and varieties. It appears to be as easily cultivated as any of its congeners, and quite as hardy.

Fritillaria tulipifolia.—This is one of those hardy flowers that may be described as peculiar and striking rather than beautiful or ornamental; but being a spring flower, it will be of interest to amateurs and others who delight in variety of character independently of showy colours. The flowers are solitary, drooping, large, and like an inverted Tulip, very dark or brown purple inside, and milky blue outside. It is very hardy, and grows freely in common garden soil. Native of the Caucasus.

Campanula Medium calycanthema.—The Canterbury Bell, though a favourite flower, and cultivated of old with more zest than now, has not improved, nor had any very striking feature added to it till within the last few years. The pale-rose varieties are the most marked improvement in colour that have been introduced for a generation or two, but we can now speak of an alteration in the calyx in the present subject, which adds a new interest and value to this old-fashioned flower. In this new variety of Canterbury Bell, the calyx is petal-like in colour, and to some extent it approaches the petal in size also, being much enlarged. At present the calyx is the same colour as the petal—blue or white, as the case may be; but a rose-coloured calyx and white petal, or a blue petal and white calyx, or *vice versa*, may be amongst the possibilities of the not very distant future.

Myosotis alpicola.—This is a diminutive but very pretty Forget-me-not. It forms a neat tuft about 3 inches high, with small, dark-green, hairy leaves and deep blue flowers, slightly fragrant—the latter quality most noticeable at night. It is best adapted to pot-culture among choice Alpines in a cold frame. The protection of a frame in winter is of most importance, because it is apt to perish of wet in the open ground. In summer, when making its growth, it will bear abundance of water, and must have it in plenty if free growth is to be encouraged, but the drainage should be very good. On well-constructed rockwork it will succeed better than on level borders, and may be left out in winter if care is taken to cover it in prolonged wet weather with a cloche or bell glass. Gritty loam is the most congenial soil for it. It is an old plant, but rare.

Pentstemon heterophyllum.—Beautiful and numerous as are the species and varieties of this favourite genus, the present species lately introduced to cultivation is scarcely equalled in point of colour by any of the older and better known ones. It grows about 18 inches high, in neat compact style. The leaves are narrow-lanceolate, pale green, or glaucous. The flowers are produced on long racemes, borne on slender stalks, and are brilliant sky-blue. From seed, the plant varies somewhat in colour in the depth of the blue, and occasionally in being reddish purple. It is a native of California. I cannot speak from experience of its hardness and cultivation, but it does not appear to be more difficult than that of other *Pentstemons*. In wet, cold localities, stock should be struck in autumn in pots, to keep over winter under protection.

Primula elatior magnifica.—This is one of the most beautiful of the elatior tribe of Primroses. It has the compact tufted habit of all the breed. The flowers are large, about the same size, and fringed in the way of a good type of Chinese Primrose, bright gold in the centre, and shading into clear primrose yellow on the margin. They are supported on stout stalks high above the foliage in great profusion, and are very fragrant. It is a beautiful plant for spring bedding, being very showy and effective in masses at a distance, and withal neat. For pot-culture, for the purpose of greenhouse decoration early in spring, it is very desirable, as it bears forcing very well, and lasts a considerable time in bloom.

Saxifraga peltata.—One of the most extraordinary and distinct of its family. It produces large lobed leaves 8 inches across, attached near the centre to strong stalks 18 inches or 2 feet long, and bearing striking resemblance to an umbrella, in consequence of which it is popularly called Umbrella plant. The flower stalks rise to the height of 2 feet, bearing cymes of large, white, rose-tinted flowers. It forms strong fleshy creeping stems, and is found growing on the margins of streams in California, with the stems frequently submerged. This at once suggests its fitness for ornamenting the banks of streams and lakes in this country, and that abundant moisture is an

essential condition to its successful culture anywhere.—W. S. —(*The Gardener.*)

NOTES AND GLEANINGS.

THE thirtieth anniversary dinner in aid of the funds of the GARDENERS' ROYAL BENEVOLENT INSTITUTION, is appointed for Wednesday, July 2nd, and the Right Hon. Lord Henry Gordon Lennox, M.P., will preside upon the occasion.

— THE splendid collection of HARDY RHODODENDRONS belonging to Messrs. J. WATERER & SONS, Bagshot, Surrey, which for the last twenty-three years has proved so attractive at the Royal Botanic Gardens, Regent's Park, will this year be exhibited at the Alexandra Park, Muswell Hill, where a large space is being covered for the purpose. From the appearance of the plants the show promises to be one of the best ever seen. We understand that Messrs. LANE, of Berkhamstead, will furnish the show at the Regent's Park this summer.

— WITH a rapidity which is very unusual in the publication of continental reports, we have before us "*Les Fêtes Florales de Gand*," which is an elaborate account of the recent GREAT HORTICULTURAL EXHIBITION AT GHENT. We cannot but commend the industry of the authors of this report, who have set an example to the rest of our continental friends as to how and when such reports ought to be prepared. We have frequently referred to the tardiness with which these formerly made their appearance. It seemed to be a matter of indifference as to when they were published, so long as they some day or other saw the light, and it was an ordinary occurrence for the report to be first circulated six or nine months after the event took place. We have here, however, a very full and exhaustive "*Compte-Rendu*" of the Great Quinquennial Exhibition of 1873 presented to the Cercle d'Arboriculture de Belgique, already in the hands of the public; and for the expedition with which this appears we are indebted to a body of energetic enthusiasts, well known to all lovers of horticulture and arboriculture—Messrs. Oswald de Kerkhove de Denterghem, Fred. Burvenich, Ed. Pynaert, Em. Rodigas, and H. J. Van Hulle.

— THE seventeenth edition of Mr. Rivers's "*MINIATURE FRUIT GARDEN*" has been sent to us. May it and its author continue to be with us for many years more.

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHERE any main crops have failed, no time should be lost in getting-in more seed; if the soil is moderately moistened by rain, so much the better for putting in the seed, but it should not be waited for, as if seeds are sown when the ground is dry and warm the first shower will be of more service than if they are sown after it. *Basil* and *Marjoram*, if forwarded in pots or boxes, may be transplanted on a rich border as soon as there comes a shower of rain. Make another sowing of Long-pod or Green Windsor Beans, or any other approved sorts, and earth-up the early crops, but if the weather continue dry give them a good watering previous to doing so. The seed-beds of *Broccoli* should be frequently sprinkled with soot, wood-ashes, or dust of some kind to preserve the young plants from what is commonly called the fly. The young seedlings sometimes disappear without any apparent cause, but if they were examined about ten o'clock at night with a lighted candle the cause would show itself in the shape of slugs; to destroy them sprinkle quicklime over them. Thin and water the *Carrots* required for early use. If the first main crops have failed, sow seed of the Early Horn immediately. When the linings of the beds of *Cucumbers* are removed, care must be taken that the heat is not great immediately round the sides of the frame; as a large portion of the roots of the plants will be found there, water should be more frequently given at the sides than at other parts of the bed. As soon as the ridges are ready for the plants these may be planted out beneath the glasses; they must be kept well covered with mats during the night. Thin the early-sown *Parsley* as soon as it is up. Select some old plants that are well curled to leave for seed. Earth-up and stick the advancing crops of *Peas*, but previous to doing so they should be watered if the soil is dry. Make another sowing. Water *Potatoes* in frames during dry weather; hoe and stir the soil between the rows of the early out-door crops. Thin the crops of *Spinach* as early as possible after it is up. If this is neglected it runs to seed in a very short time. Make a sowing of *Scarlet Runners* in the open ground to succeed those that may be forwarded in boxes, and which will be ready to plant out the latter end of the week. If the *Tomatoes* were raised in heat at the time I recommended, they will now be strong and fit to plant out at

the end of the week; but one plant should be planted in a place, and they must be kept well watered till they get root-hold. Thin the advancing crops of *Turnips*, and make another sowing of *Stone* to come-in in July and August.

FRUIT GARDEN.

Wall trees now require especial attention; disbudding should be performed at an early stage of growth, and immediately afterwards the trees should be washed with clean water if there is no appearance of insects; if there is, use tobacco water and soap suds in which some flowers of sulphur is held in suspension. This mixture by being timely applied will effectually destroy all insects that infest wall trees, with the single exception of scale. It is by early neglect that wall trees are so frequently injured, for if the growth of the first shoots is destroyed the after ones scarcely ever ripen, and the following winter generally destroys them. Gooseberry bushes must now be narrowly watched; the caterpillar has begun to make its appearance and promises to be as numerous as last year. If the soil was not removed under Gooseberry and Currant bushes in the autumn, as recommended, and some lime and soot strewed and covered with the back of a rake, which would destroy the eggs, the only good remedy now is to gather the leaves which have eggs upon them and burn them. The parents, of which many will be found about the bushes, should also be destroyed. Thin Apricots to about one-half the crop where the fruit have set very thickly, regulate the shoots and remove those that are not wanted. Attend to Vines against walls, disbud them as soon as they break. Alpine Strawberries now deprived of their flowers will produce fruit in August. Water Strawberries if the weather is dry. Attend to the disbudding of wall trees.

FLOWER GARDEN.

The importance of grouping plants in flower gardens according to their complementary colours has been so repeatedly insisted on in this Journal, that it would scarcely be worth while to advert to it if it were not for the great accession of subscribers during the present year. The leading principles of this system of management are contrast and symmetry—contrast such as will be produced by placing the complementary colours pretty close together, as scarlet with white, purple with yellow, orange with blue, and so on with the various shades of these colours *ad infinitum*; and symmetry, such as will result from each bed having a corresponding one in form and disposition, and these beds planted with flowers of the same colour. In borders which are seen throughout in their length and breadth, the colours should be repeated at regular intervals, as scarlet, white, purple, yellow, blue, orange, and so on to the end; and where beds are placed on grass, and without a corresponding one near them, they should be belted with the complementary colours, as blue with an orange margin, purple with yellow, and scarlet with white; or, as green is the proper contrast for scarlet, beds of that colour may be left without a margin, and white under such circumstances used as a distinct bed. Where beds are on gravel, which is a warm colour, cold colours should be the most used, as blue, purple, or white, which for floricultural purposes takes the place of green; or, if warm colours must be introduced, it is indispensable that they be margined with cold colours. In large gardens, where there is a great preponderance of green, as large lawns, or trees, extensive lakes, and more especially if the trees are sufficiently large to throw considerable shade upon the scenery, nothing but warm colours should be used, as scarlet, orange, and yellow, and these should be planted in large masses, and stand out prominently in the foreground, and especially near the water. Whoever has walked through the metropolitan parks will have noticed how much more cheerful is the aspect of the lake in St. James's Park than it is in Regent's Park or Kensington Gardens, and this is because the water is surrounded by gravel, which gives warmth to the scenery. As I observed last week, all blooming Auricula plants ought to be under awnings in a northern aspect. Keep the pots free from weeds. The green fly is often troublesome at this season, getting into the hearts; examine them daily, and remove the insects with a camel-hair brush. Polyantheses require some attention just now in shading, watering, &c. Watch seedling plants as the blooms pass through their various stages of development and decay, and observe whether the lace or edge keeps its colour (which ought to be similar to the centre) to the last. This is an essential property often overlooked by beginners. Many persons are watering Ranunculuses, a practice I would not recommend if the beds are properly made, as I am persuaded it has at the present time an injurious tendency. Top-dressing with very rotten cow manure is far more beneficial. Some genial showers would be most acceptable to Tulips. In addition to heavy complaints of the number of bulbs which do not flower, there is a greater proportion with distorted petals than usual.

GREENHOUSE AND CONSERVATORY.

Where there is a general collection of plants in one house it is difficult to adopt measures suitable to all. Many plants now require an abundance of air, while the Camellias need extra heat to assist the formation of flower-buds; the latter should be

shaded from the direct rays of the sun. The plants will be benefited by an occasional syringing.

STOVE.

Young seedling plants must be shaded from the sun: as soon as they are large enough pot them off. Recently-sown seeds may be shaded by a sheet or two of paper. Great care should be taken in watering small seeds; in the absence of a very fine rose a brush may be dipped in water and the hand or a slip of wood drawn along the bristles, so as to cause a shower of spray to fall upon the seeds. Give air at all favourable opportunities.

PITS AND FRAMES.

Repot Balsams, Cockscombs, Globe Amaranths, Ice plants, Sensitive plants, and most tender annuals; the soil for the purpose should be light and rich. Cut the flowers from the Balsams while the plants are small. Pot-off cuttings as soon as they are rooted, and put them in a close frame for a few days, keeping them shaded. Put in cuttings of Cinerarias. Pot suckers, and put in cuttings of Chrysanthemums.—W. KEANE.

DOINGS OF THE LAST WEEK.

A CHANGE of wind has brought us fine weather, but we have had a very slight rainfall, so that our rain-water tanks in the hothouses, though much larger than they are at many places, are mostly empty; we have been using pump water, which is not good. Last year we obtained all our supply for the fruit and plant houses from the rain-water tanks. We do not see any damage that has resulted to the fruit-tree blossoms from the frost, and we hope that there will yet be a full crop.

KITCHEN GARDEN.

Keeping the hoe at work amongst all the crops. There are few weeds, but the hoeing does good in many ways; it exposes the larvae of insects and other enemies of our crops, which are picked up by the feathered tribe.

Asparagus.—We are cutting excellent shoots from young beds. The Asparagus was planted rather differently from the usual plan, which is to lay the ground out in 4 or 5-foot beds, with alleys between. The plants are put out 9 or 12 inches apart; this is far too close to allow them to develop themselves. We had the ground trenched in the usual way to the depth of 24 feet, and when the plants had grown a few inches they were planted out in rows 24 feet apart, allowing a distance of 18 inches from each other. Managed in this way we get a larger produce of better quality from the ground. In last week's Journal Mr. Keane says, "Do not cut the weak shoots." We have always done so, thinking that by allowing them to remain they would run away with the strength of the plant, and strong shoots would not come so freely. This seems feasible, but we should be glad to hear what is the practice of others. Asparagus treated as it is here does not throw up many weak shoots.

We sowed Longpod Broad Beans; it was more for comparison, as only one sort is used in the kitchen here. It has been grown for more than half a century at this place; it is the best Bean I have yet seen. There are seldom more than three beans in a pod; they are very large, and of excellent flavour.

FRUIT AND FORCING HOUSES.

We are still working amongst the Vines in late houses. All the shoots have been pinched and the bunches thinned to one on each shoot. The bunches are very large, and there is not one that is malformed in any of the houses, all the varieties showing an abundant crop. The outside borders are not covered in any way during the winter, unless the frost is very severe, when we place a thin coating of stable manure over them. A little frost is beneficial. Peaches, Nectarines, and Plums are an abundant crop in the orchard house. The shoots have been stopped and thinned-out. The trees are syringed thoroughly with a garden engine before 8 a.m., and when the house is shut up at four in the afternoon. The trees are now requiring copious supplies of water at the roots, as all of them are in pots. Pears have not set well, indeed they never have set freely with us; we do not know what is the cause, whether it is the construction of the house, which is a large span-roof running east and west, or the treatment they receive.

The Melons are setting pretty well; the plants have been trained to the trellis, the shoots pinched-back and thinned-out where too thickly placed. Cucumber plants have been looked over, some of the old shoots cut out and young ones trained into their places. We are cutting plenty of fine fruit, and shall do so from the same plants for twelve months.

Early Peaches.—We have picked ripe fruit of excellent flavour from a put tree of Early Beatrice Peach. It was placed in the Cucumber house about the second week of January. The plant had been plunged out of doors up to the last week of December, and it had no artificial heat whatever until it was placed in the Cucumber house. A plant of Early Rivers treated in the same way will give us a dish of nice fruit next week. We merely mention this to show the great value of these Peaches for providing a dish or two of early fruit.

CONSERVATORY AND PLANT STOVE.

The conservatory is now very gay with flowering plants. *Herbaceous Calceolarias* are coming in, and are very fine this year; the cool and rather wet season last year just suited them. As a rule our summers and autumns are too dry and hot for them; we cannot grow them here as we did in Pifeshire many years ago, when we used to grow large bushes of named sorts. We never attempt to cultivate any but seedlings now; but we must say the strains supplied by the seedsmen are excellent. *Cinerarias* are at their best, as the weather has been so cool, but a week of hot drying winds will sadly disfigure them. These we also grow from seeds annually.

Deutzia gracilis has been the admiration of all visitors, the plants are literally sheets of snowy whiteness. They are grown all the year round in pots, and we are careful with them while making their growth. Those forced early are kept growing under glass until the middle of May, when they are turned out in a sheltered position, and repotted early in June.

In the plant stove much time has been occupied in looking over plants infested with mealy bug. Six weeks ago it required a searching investigation to find one in the house, now *Gardenias*, *Ixoras*, *Stephanotis*, &c., are covered with minute specimens; they come like this when other work is pressing. We have been repotting and rebasketing all Orchids requiring it; those in good health are let alone. There are some sorts, not usually grown well, in perfect health with us, that have not been repotted for six or seven years. Many Orchids are injured through over-potting; let the pots and baskets be small for the size of the plant. We put in cuttings of *Bouvardia Vreelandii* and *B. jasminiflora*; they strike best in an ordinary hotbed with a moderate bottom heat. The old plants were cut over and will receive careful attention, as our stock is small; they are of great value to us all through the winter months. *Eranthemum pulchellum* is also being propagated, it produces abundance of its pretty blue flowers all through the winter.

FLOWER GARDEN.

The beds are in readiness for the bedding plants, and nearly all the plants are ready for the beds. The *Calceolarias*, Zonal *Pelargoniums*, and other hardy subjects will be planted out next week. If the weather is favourable we invariably commence bedding-out in the second week in May. Of course, *Colons*, *Iresine*, *Alternantheras*, and other tender plants come last, and do not go out for two or three weeks later. We were short of boxes and pit room, and many *Verbenas* have been planted out as previously recommended for *Calceolarias*.—J. DOUGLAS.

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

CARPET FLOWER-BED PLANTING (T. J.).—Your plan seems very good, only we would omit *Sedum azoricum variegatum*, and simply have *Echeveria secunda glauca* as a bordering in single line; then two or three lines of Golden Feather *Pyrethrum*, and fill-in the centre with *Iresine Lindenii*, or if the bed is very small, one of the best varieties of *Alternanthera* may be substituted for it, as the cutting-in of the *Iresine* always shows the use of the knife. In general we like to have one flowering plant in each bed, and if you had substituted a dwarf blue *Lobelia* for the *Iresine* or *Alternanthera* we should have liked it as well; nevertheless, we are aware that at the present day foliage is often preferred; and we have ourselves planted several beds during the past spring with hardy plants intended to produce a similar effect to that to which you allude, using *Sedums*, *Sempervivums*, *Arabis*, and other plants. We have a difficulty, however, in finding anything with the high colouring of *Iresine Lindenii*.

SUCKERS FROM RASPBERRIES (M. H.).—The suckers from the base of the canes which were planted a year ago and died to the ground in summer, will give you strong canes this year, and we should thin them to six or eight, leaving the strongest. The canes made this year will produce fruit another year, and be in every way better than any you may plant in autumn.

BLUE BEDDING PLANT (Idem).—*Lobelia speciosa* is very showy. Imperial Dwarf *Ageratum* is also good and quite as showy. Blue Gem *Veronica* is also a good light blue bedder.

FRUIT TREES BLOSSOMING ONLY AT THE SHOOT-ENDS (T. H. W.).—In general all our hardy fruits as Apples, Pears, and Plums produce most fruit near their extremities, the spurs bearing the fruit blossoms being most abundant on the wood that is two, three, or four years old, the older portion of the tree becoming less fruitful, although not entirely so if pruning be attended to. In all cases the wood of greater age than that alluded to, bears

more sparingly than that which is younger. Training young shoots from the centre of the tree, if it is against a wall, will in a measure restore fruitfulness in places where wanted, but it is not so successful with open standards; nevertheless, much may be done by pruning, still in most cases the greatest quantity of fruit and that which is best is produced near the extremities, and we see no objection to this in the case of the kinds of fruit alluded to. Good management ought to insure an even crop of Peaches all over the tree, and the same may be said to be the case with Morello Cherries, Gooseberries, and Currants. Much, of course, depends on the health and vigour of the tree, the character of the season, and other features.

THICK-NECKED ONIONS (T. H. W.).—There are various causes contributing to this deformity; one being spurious seed: another a wet, cold, or late situation; and another the insects, only the latter evil results in a sort of bladder-like formation rather than a thick neck. In general, if good seed be obtained and sown sufficiently early on dry ground, and the season becomes moderately dry and fine, Onions of proper size and shape will be formed, either larger or smaller as the character of the ground and their cultivation is attended to. But if the situation is damp their growth is prolonged too late in the season, and a number of thick-necked only half-ripened bulbs will be the result. In such places a good dressing of charcoal dust at the time of sowing will be beneficial, in addition to thorough drainage and as much road sand as can be had, or anything that will tend to make the ground drier and more porous.

GOLDEN-LEAVED FUCHSIA TURNING GREEN (Amateur).—Most likely your plant is turning green in consequence of having been recently potted in a richer material than that in which it was before, whereby a degree of greenness is induced fatal to variegation both in this and in many other plants. We are unable to maintain the golden colour in our Japan Euonymus when they are planted out of doors, and it is the same with many other plants. In the case of your Fuchsia, if it is not placed in too large a pot we would not disturb it now, but wait until the pot be filled with roots, and most likely the proper colour will be restored as the plant's vigour becomes checked. Water also sparingly, and do not let the plant flag.

GERANIUM SHOOTS LONG-JOINTED, AND SAPPY (Amateur).—Perhaps your Geraniums, if of the greenhouse class, have been potted in very rich soil, and, aided by heat and moisture, grow too rank. The most natural remedy to this, or rather the remedy that will come by degrees, is the pots becoming better filled with roots, and the growth being consequently checked. If they have been recently potted do not give them much water, and, of course, avoid manure water. Expose the plants as much as possible to free currents of air, do not let them stand too thickly together, and most likely the evil you complain of will cease. Long-jointed shoots are often caused by too much coddling, and, perhaps, an absence of light; but the season is at hand when there need be no more occasion for this, as the plants will very soon stand out of doors. We need hardly say you must insure these to the open air by degrees.

DEUTZIA GRACILIS (M. S.).—In our columns to-day we hope we have published what you require.

GRAFTING AND BUDDING ON THORNS (F.).—Besides the Medlar and Quince, the Pear will succeed, but we do not know of any other fruit.

PLANTS BY PATHWAY IN CONSERVATORY (Idem).—In winter we should have bulbs in pots so as to be removed when not in condition, and shrubs as Deutzias, flowering Peaches, Spiræas, Thorns, Lilacs, Weigelas, also Dielytra spectabilis; to be succeeded by Cythusa, Lily of the Valley, Azaleas, Pelargoniums, Fuchsias, and the hardier kinds of greenhouse plants, not forgetting Camellias, Roses, especially Tea-scented, Mignonette, Violets, &c. We have no idea now of your former query, and we cannot be so explicit as we could have wished from your not giving us any present data. Write us again if there be anything respecting which you wish for special information.

CAMELLIA IN GREENHOUSE UNDER VINES (H. B. M.).—Camellias will succeed under the Vines in your greenhouse, with fire heat in winter to keep out frost. It is well to sprinkle plants overhead morning and evening when making fresh growth, but not after it is completed, when flowering, or in winter. After repotting, it is well to use a rose a few times until the soil becomes firm. At all other times water should be applied without a rose, winter and summer, directly at the roots, syringing in addition.

LILIFUM AURATUM (T. Wheatdon).—A long article on its culture by Mr. Robson is in No. 594 of this Journal, published August 15th last year.

SYRIAN VINE (J. Dabell).—Grow it on its own roots. The following is the description in Dr. Hogg's "Fruit Manual":—"Bunches immensely large, broad-shouldered, and conical. Berries large, oval. Skin thick, greenish white, changing to pale yellow when quite ripe. Flesh firm and crackling, sweet, and when well ripened of good flavour. This is a very good late Grape, and generally produces bunches weighing from 7 lbs. to 10 lbs.; but, to obtain the fruit in its greatest excellence, the Vine requires to be grown in a hot-house, and planted in very shallow, dry, sandy soil. Speechly states that he grew a bunch at Welbeck weighing 20 lbs., and measuring 21½ inches long and 19½ inches across the shoulders. It is a strong grower and an abundant bearer."

LUCERNE—ITALIAN RYE-GRASS (E. R. P.).—April is the best month for sowing them, but you may sow low. The Lucerne should be sown in drills, for it should be frequently hoed. The Rye-grass may be sown broadcast.

SPRING BEDDING-PLANT SEED SOWING (Esse).—The seeds of all the plants you name ought to be sown from now up to June in rich, light soil in a sheltered position, and when large enough to handle the plants should be pricked-off in light rich soil about 3 inches apart, and in autumn either be planted where they are to flower or be transplanted to double that distance apart, moving them with balls in spring.

EPIPHILLUM TREATMENT (Idem).—Repot them in spring after flowering; or, if they do not flower, in April. Provide good drainage, and a compost of sandy fibrous loam and sandy peat in equal parts, and one-fourth of silver sand, pieces of charcoal, broken pots, and leaf soil or old dry cow dung. They are best grafted on Pereskia stocks. Grafting is easily performed by cutting over in a slanting direction the stock and putting on a shoot of the Epiphillum, securing it with a thorn of the Pereskia, tying with matting, and covering lightly with moss. It may be done in spring before growth, or after the growth is complete. Water the plants moderately, but when growing afford moisture, and in winter give water only to keep them fresh. Afford a light airy position, only when growing slight shade is preferable.

FUNGUS-LIKE EXCRESCENCE (F. H.).—The singular hard excrescences on the branches sent are due to insect agency, for on making a section a fine live larva may be seen in each node.

SOWING ASTERS OUT OF DOORS (S. F.).—You may sow the seed of Asters this month in the open ground, choosing a warm sheltered border of light

rich soil, which should be made very fine, or the surface covered with about 8 inches deep of loam and leaf soil mixed. Sow the seeds in shallow drills about 8 inches apart, drawn with the finger. Scatter the seeds evenly half an inch apart, and cover them about a quarter of an inch deep. It would be well if the bed were protected by a mat, kept from resting on the soil by sticks hooped over the bed, and which may remain on until the seeds are up, and should then be withdrawn in the day, but replaced at night. If water be needed to keep the soil moist, apply it in the morning, through a fine-rosed watering-pot. They will come on slowly, but will make sturdy plants, which if planted out in June in rich soil will flower freely in autumn. The covering at night will only be wanted in frosty weather during May.

BELLADONNA LILIES NOT FLOWERING (Constant Reader).—We advise you to keep the pots on a light airy shelf in the greenhouse, and constantly on saucers or pans of sand kept wet. Do not allow the sand to become quite dry even when the plants are dormant in summer. The flowers are produced late in summer or autumn without the leaves, which come afterwards, and continue to grow throughout the winter, during which time they should be kept moist, as in April and May, then reduce the amount of moisture as the leaves turn yellow, and discontinue watering altogether when growth is complete, still keeping moist the sand on which the pots stand, and not watering again until they flower and grow. Do not repot until the roots split the pots.

VINE LEAF DISEASED (J. T. I.).—We have not in all our experience seen a similar disease on Vines to that on the leaf you have forwarded to us. The under side is thickly blotched with a white fungoid growth, which must be highly injurious to the Vines. We would dust the leaves with flowers of sulphur, and also paint the hot-water pipes with the same mixed in water to the consistency of thin paint. A little soft soap may be dissolved in the water to make the mixture adhere. The pipes must be made tolerably hot to cause the sulphur to take effect. We fancy you do not ventilate your house sufficiently.

RED DOYENNÉ PEAR ON SOUTH WALL (Centurion).—This does well as a pyramid on the Quince in the south of England. We think it would be improved by being grown on the wall.

ZONAL PELARGONIUM LEAVES DISEASED (Amateur).—We have seen the disease before. Our first experience with it was on a plant of one of the new double varieties, and on examination it was found that the roots were also affected. Turn your plants out of the pots, and shake all the soil from the roots. Repot in smaller pots in a compost of turfy loam, leaf mould, and silver sand. The plants will grow out of the disease with careful treatment.

SUMMER TREATMENT OF PEAR AND APPLE TREES (F. J.).—We would not pinch back the shoots of Apple trees before midsummer, unless the young wood was much crowded. Pear trees require to be pinched earlier in the season. We notice some wall trees in our own garden which will be pinched when we can spare the time. Most of them will not be gone over until June. They all require to be looked over again in the autumn.

DISEASED GRAPE VINES (J. H.).—You are giving too much water. The border being outside could not possibly require any water so early in the season, and using diluted liquid from the cow-shed would make it more injurious. We never give manure water until the fruit is set.

CHERRY TREES GUMMED (J. P. Bristol).—Gumming is caused either by the roots penetrating into unsuitable soil, or by an injury to the bark. If it does not arise from injury, you must lift the roots out of the subsoil and replant them in turfy loam, if it is to be had. The top spit of some old pasture is the best.

VINES NOT BREAKING REGULARLY (J. Holland).—You ought to examine the roots of your Vines. If they are unhealthy that will account for not breaking well. If the border is unsuitable it should be renewed. The treatment you have given them is correct, but if the rods are very long they ought to be bent down before the house is started. A young rod ought annually to be trained-up from the base of one of the Vines to renew the old ones.

HEATING A PERN HOUSE (M. S. B.).—A Fern house might be heated by an Arnot's stove without injury to the Ferns, provided a supply of water were kept on the top, and the path watered daily.

MUSCAT GRAPES IN A LATE VINERY (Amateur).—In general these Grapes do not succeed well in the same house with the Black Hamburgh, but we have known them do very well with Lady Downe's and Madresfield Court, Grapes that require more ripening than the Black Hamburgh. We do not like the Downwood Muscat so well as the old Muscat of Alexandria, and in a Muscat house we are weeding-out both the Canon Hall and Bowood Muscats, as they set badly; although the bunches show with stouter necks and more vigour than those of the old Muscat of Alexandria, they do not finish satisfactorily. We are surprised at their doing badly in your earliest house, whereas in most cases they succeed best when forced early, as it gives them a longer season. We fear there is something wrong with your plant in the early house, otherwise it ought to produce more. In general the Muscats show more bunches than other kinds of Vine, certainly more than Madresfield Court and Barbarossa. Was the wood well ripened last year? That is an important point. The number of bunches on a Vine entirely depends on its strength and the space it occupies. Some Vines have a rafters 20 feet long or upwards, and a space more than 3 feet wide, while others have less than half the above area. The spot on the Black Hamburgh may have been caused by rude handling at thinning time, and if so will wear off as the berries swell; but if it arise from another cause, as imperfection in setting, or some other defect, which puzzles the most practical men of the day, we can give no opinion. Sudden cold draughts are often blamed for this, and we are strongly inclined to coincide in this view.

POISONED WHEAT (C. Northumberland).—It is made by soaking Wheat in a strong decoction of hux-vomica, or in a solution of arsenic. Its use is now illegal.

PLUMBAGO CAPENSIS DYING BACK (J. Devon).—The appearance is certainly unsightly, otherwise it is better not to cut back the Plumbago, or, in fact, any other plant until its wood becomes ripened or nearly so, and most likely yours has been cut back too soon. We think, however, there is something else the matter, as it dies back by degrees after growing a few inches; perhaps it has had too much water, or has been injured in some other way. If its tendency to die still further back continue, we would advise that the plant be taken up, potted, and plunged in gentle heat for a time, and that from the place where it has been growing all the old soil be removed and replaced with fresh, affording sufficient drainage before the plant is replanted. We have known a plant of this kind die from being too much crowded; and if the soil it is growing in is invaded by the roots of some neighbouring Acacia or other strong-growing plant, the Plumbago may have succumbed through sheer starvation, which we have known more than one plant do. An examination

of the soil will, perhaps, reveal the cause of the evil, and the remedy will remain in your hands.

INSECT IN RASPBERRY CANES (*J. Coles*).—The red grubs are the larvæ of a very small moth called the Raspberry-bud moth. The egg is laid by a moth in a bud, and the grub from the egg eats its way into the cane. Entomologists now call the moth *Lamproloma rubicella*, Linnaeus called it *Tinea corticella*. We know of no mode of prevention except cutting off and burning all the parts of the canes which give evidence of having grubs within them.

NAME OF FRUIT (*Harrison & Sons*).—Holland Pippin.

NAMES OF PLANTS (*D. C. M.*).—1, *Thuja borealis*; 2, *Cupressus Lawsoniana*; 3, *Wise's Holly*; 4, *Taxus pyramidalis*; 5, *Retinospora obtusa*. (*R. H.*).—Probably *Dalechampia rosea*, but the specimen is very bad. (*D.*).—1, *Stellaria Holostea*; 2, *Veronica serpyllifolia*; 3, *Myosotis collina*; 4, *Valeriana olitoria*; 5, *Luzula campestris*; 6, *Aspidium angulare*; 7, *Nephrodium cordifolium*; 8, *Spartanum africana*. (*Thomas*).—*Acacia Drummondii*, or some nearly allied species. (*F. W. H.*).—1, Probably *Oxalis megarhiza*, *Jacq.*, but specimen unsatisfactory; 2, *Indeterminate*, it does not look like a *Linum*. (*Mac.*).—1, *Hypnum undulatum*; 2 and 3, *Fumaria hygrometrica*; 4, *Weissia cuvirostrata*. (*T. J. H.*).—Common Ribbon Grass, or Gardeners' Garters, *Phalaris arundinacea*. (*A. C.*).—We never heard of either *Arthropodium* or *Sarana*. We imagine *Arthropodium* and either *Saurauja* or *Saraca* must be meant.

POULTRY, BEE, AND PIGEON CHRONICLE.

FOWLS PAST AND PRESENT—THE LAW OF DEVELOPMENT.

As "CORNISH DUCKWING" supposes, I am very glad if any remarks I may at any time make are the means of causing discussion upon any point connected with our useful and pleasant hobby. A man who has no taste and no opinion of his own, will never come to much good in the poultry fancy, since the very essence of success in it is, the stamping of his own ideal upon a race of birds, which, of course, he cannot do if he does not really possess any. I have fought hard and perseveringly for my own type of Brahma, and like to hear any other man for his own type of Game. But I am not quite sure that either "Old Black Hen" or "CORNISH DUCKWING" have altogether understood the remarks I made, and hence I reply both to them and some other remarks upon other subjects which have appeared, not so much as defending any particular disputed proposition, as by way of further illustrating very simple laws which do not yet seem thoroughly understood.

On some matters of fact I should be disposed to differ from "CORNISH DUCKWING"—not on his Game facts, respecting which I know him to be an authority not lightly to be called in question; but as regards Spanish and Dorkings, I lived for years at the very stronghold of the Spanish fancy, and I feel compelled to say that as far as my individual opinion goes, the faces are considerably inferior now to what they were years ago. They used to be bred to a quality that needed little preparation, whereas now the dark room, tweezers, and other treatment have to supplant the breeder's art to an extent which would make any breed delicate. The best specimens are put time after time in their dark house, and go from the warm confined atmosphere to the show, and after this being repeated on many occasions the birds are bred from. Would any fowls fail to produce weakly chickens after such treatment? It is not "breeding" for face, but "treating" for face, that in my opinion has done the mischief. At all events the modern faces are far inferior to those of even half a dozen years ago.

Then, as to Dorkings, my strong impression is, that their constitution is, on the whole, better than formerly, and that bumble-foot is not owing at all to increased size (else why do not Cochins and Brahmas have it), but solely from fixture of the fifth claw, which in the old Coloured Dorkings was far from constant. Now it is, and we see the result. That many birds are coarse I admit. I have seen evident traces of feather on the legs, but these crossed birds ought to be, and probably are, more hardy, and are not allowed to take prizes. The celebrated Holmesdale strain certainly was neither delicate in constitution nor coarse in eating.

But this case of the Dorking opens-up and curiously illustrates a general question, which is virtually touched upon by "CORNISH DUCKWING," when he suggests that while my review of the poultry of 1872 may be "satisfactory to the fancier," other readers who "breed for use," may think what we have gained in size and feather has been dearly purchased. Many other people are constantly asking, "What have shows done?" and seem to think it hard not to say wrong, that their effect is not rather to increase the production of eggs and the edibility of the flesh. They virtually argue that the tendency of shows ought to be to encourage improvement in these respects; and it seems so true that many people never think of questioning it. Yet a very little thought will show that the thing so desired is from the very nature of the case a simple impossibility. Take any show. Here are a lot of fowls all in pens, and here are the gentlemen who have to judge them. Now, how can they possibly do this judging except by having sole regard to points, which they can either feel or see upon the spot? It is manifest they

cannot. One Hamburgh hen may be a much better layer than her neighbour in the next pen, but how can the judge know that? Would anybody trust testimony as to such points? I fear morality is not high enough for that, and by no other means can such things be known. If the good layer is an ugly and faulty bird, and the worst layer the handsomest in the class, the latter must get the prize simply because prizes must be given, and only can be given for certain points which can be made evident in the show-pen itself. This, of course, necessitates certain understood standards of perfection, and whatever these may be, they must be equally arbitrary. People ask sometimes why a prize fowl must be so-and-so? If it was not that, it must from the nature of the case be bred to some other standard just as fixed and arbitrary, so we may as well have the present as any others. If anyone can see how such standards may be avoided in live fowls (I use this qualification for reasons which will afterwards appear), I shall be very glad to see the matter discussed, but for my part I confess I have thought long and anxiously over the matter, and can see no escape from the general conclusion I have expressed. If it can be avoided, any further than by the attention to size, health, and apparent vigour which a good judge always gives and is expected to give, the discovery would be of the greatest importance and benefit.

Now, see how the Coloured Dorking illustrates this. Here was a fowl which it was said should not be a "fancy" bird. We would have one breed judged only for the table and by its fitness for it. Colour and feather were mere "arbitrary" points and should find no place in judging our Dorking. The fowl then was of a medium size, of all colours, though usually a grey speckle, and bred if anything oftener without the fifth toe than with it; hence, was comparatively free from bumble-foot to what it is now. How was the fowl judged then? and how did the plan work? The reply is a most curious commentary as to the absolute necessity for "fancy points." At first our fowl was judged almost exclusively by size; the largest and heaviest birds carried the day, though even then some regard was paid to colour, for cocks with breasts almost white, which were often bred in those days, were rarely shown and hardly ever won. But as crosses would give this size, which was of so much importance, some safeguard was needed for purity of race. We would not be particular as to colour, &c., but the Dorking must really be a Dorking, of course. Now, to determine purity of race we have really no guide whatever, but external characteristics of some sort; as we would not have colour we must have something else, and it was enacted that our Dorking must have the fifth toe. So to avoid a standard of colour, which may be perfectly natural though arbitrary, and could in itself have no evil result, we were forced to insist upon a point which is not only arbitrary but unnatural, and can be demonstrated to be actually injurious and the parent of disease! As we would not have an ordinarily artificial standard, we were forced to adopt one which is positively the most unnatural and artificial of all! In a "fancy" breed this would not be at all remarkable any more than the Polish crest is; but this was to be the practical table fowl! We may laugh at the absurdity, but the truth is it was inevitable for the reasons I have tried to point out. I might add, that by degrees a very evident standard of even colour has crept in, and this being so, although I fear my voice will be of little avail, I do not hesitate to say that the formal recognition of such, if combined with the casting-out of the fifth toe, would be the greatest boon to the breed which could possibly be, for that toe is a curse to it which must cause bumble-foot so long as it is retained, since excess in structure is always accompanied by weakness of function.

We see, then, that judges must in live fowls have before their minds some ideal external standard by which to make their awards. I wanted to make this very plain, because it lies at the root of a general law, the beautiful simplicity of which has appeared more and more clear to me for many years past, and the understanding of which in thorough reality will always make a successful breeder. This we will endeavour to examine on another occasion.—L. WRIGHT.

BLACK COCHINS.

I HAVE been glad to see the letters of Colonel Hassard and "BLACK JACOBIN," in your Journal on the subject of Black Cochins. I have reason to believe that there are more birds of this variety in the country than are supposed, but owing to there never being classes for them they seldom appear, having to content themselves with the variety class, or compete against other more established breeds of Cochins. I think if committees of shows would only give this variety a trial, they would find the class fill well. I shall be glad to subscribe to, and further in any way I can, a class at the Crystal Palace or any show.—ALFRED DABBY, *Bridgnorth*.

I HAVE much pleasure in stating that the cup required by the Crystal Palace Committee has been subscribed for by three

members only, and therefore there will be a special class for these birds, and a second and third prize given at the next Show. I find there are many breeders of this variety that have hitherto bred them light—dark, perhaps, would be a more fitting term, and I would suggest that the subscription list be continued to give prizes for chickens and adults, so that we may have a chance of seeing what there is in the country. 5s. subscription would be ample, if all would help.—F. C. HASSARD, *Sheerness*.

aiding a chicken's birth—BRAHMAS.

I SEND with this an egg-shell from which a chick has just been hatched. If you examine it you will find it a double shell. I do not mean to say that the hen laid it so, but I forward it as a successful dodge by which I think I saved the life of a chick. Yesterday morning the hen, in returning to her nest, trod upon and thoroughly crushed the original shell. I think it was weakened by a previous small crack in the narrow end, which I had covered with a little bit of postage-stamp edging. I was certain that the chick would die if left, as, if not crushed, the skin would bind it and dry to it; but it would probably have been crushed between the other eggs, as I have often had happen. They were due to hatch to-day, and I therefore thought that an outside shell might preserve it for the necessary time; so I took an egg-shell that had been used at breakfast, *rasied* it a little, and slipped it over the small end, and joined it to the original top (which was not much injured), with postage plaister, and put it under the hen again. It is very roughly done, as a clergyman with three services on Sunday has not much time for surgical operations; but it was successful, as I found that egg and another hatched this morning, and the shell just as I forward it to you, though it will probably be rather more crushed in the nest. I have written this account, because the plan may be useful to others in similar cases. And now, if you will spare me a short space, I should like to add a few words de *quibusdam aliis*.

With respect to the merits of Brahmans, my experience of them for the past two or three years has not been favourable, and I have now returned to my old loves the Silver-Grey Dorkings. The Brahmans are said to be hardy, early and good layers, great weight, &c. Hardy I found them, but not very early layers, nor could I get any weight that was of much use for the show pen, but then I could not afford to buy the monsters that may be necessary for this. Dorkings are thought tender and comparatively poor layers. Mine have been laying well ever since January 1st, not only pullets, of which I have but two, but old hens also. Several old hens were certainly laying in January, and I have never found Dorking chicks, if hatched early enough, tender. I hatched some (very few, I am sorry to say), in February, and reared them all, and since that I have lost but two or three. Late broods of anything I detest—even late June birds are seldom healthy. I think the weather is too hot for their chickenhood, and they remain stunted and probably get rousy in autumn. My first chicks this year were hatched on February 1st by a Turkey hen. She had laid four batches of eggs since the previous April, being then a pullet. I set her on fifteen eggs, but only three were hatched: they are alive and well. I have just weighed two of them. The cockerel weighs 3½ lbs. and the pullet 2½ lbs., which is, I think, pretty well for eleven weeks old, and the colours promise at present all that could be wished. Hatching this spring has been with me very bad. I could get no hens to sit for some time, though I tried all the neighbourhood; and the broods have been very small—three, two, and from a Black Red Bantam, which breed usually hatch every egg, a grand brood of one. Eight is the best I have had yet. I hope for better broods now.—E. S. TIDDEMAN, *Childerditch Vicarage*.

[We carefully noted the two shells, and admired your ingenuity. We also rejoiced at your success, because you deserved it. We have often mended a cracked egg with the border of postage stamps, but we had not the thought of putting on a shell. Jumping from one end of your letter to the other, we can tell you you have only neighbours' fare. It has been a bad hatch hitherto this season. There are always reasons why early eggs should not hatch as well as later ones. In the winter the cocks are not as attentive to the hens as they are later in the year; many eggs are spoiled by chill and frost before they are laid; the hens are allowed to be off the eggs too long at feeding time; the eggs are kept too dry. Accidental exposure of an egg for a time is fatal to hatching. For early chickens, according to our notions the eggs should be the produce of a walk of a cock and three hens (we speak of January). The hen should sit on nine eggs; she should be well fed, but never allowed to be off her eggs at that time of year more than ten or twelve minutes. While sitting she should be thoroughly protected from draught. It may not be your case, but we are convinced that in nine cases out of ten eggs are prevented from hatching, and often condemned as bad, when the only fault is they are too dry. All birds in our country naturally moisten their eggs. Nature has taught them, from the Pea fowl to the Wren, including the whole feathered tribe, to leave their nest at daybreak to feed, &c. At that time

the grass is wet, and after walking or hopping about for ten minutes or a quarter of an hour in the dew, and in that state they return to the eggs, thoroughly wetting them. They always hatch. Take all sorts of Game—take every description of Duck and Goose—take our domestic poultry, a hen or a Turkey with a stolen nest—they are seldom or never seen off feeding, but they bring off all their eggs, and they are generally the strongest chickens we have. Two or three days before the time is up for chickens to hatch, the eggs should all be tested in warm water. A pail should be three parts filled with warm water. The eggs should be taken from under the hen and put in it. As soon as the chicken feels the warmth of the water it begins to move in its shell; its antics increase as the warmth makes itself felt, and it becomes positively ridiculous to see the eggs elbowing and bumping each other. This is not only a test as to the goodness of the eggs, but it facilitates the operation of hatching. The thorough wetting is very beneficial. To make sure of success this should not be the only process. For ten days before hatching they should every morning be thoroughly rinsed with cold water; the neglect of this causes us to hear so often of chickens dying in the shell owing to their weakness. It is nothing of the sort. From heat and drought the inner membrane of the egg becomes as dry and hard as gutta percha, and it is next to impossible any chicken can extricate itself. Even one shell is too much for its strength.

It is refreshing to hear some one speak up for our old friends the Dorkings. We believe that where the spot and its conveniences are fitted for them they are the best fowls in the world. More than average layers, excellent mothers, and unequalled on the table. But they will not do for a confined spot. They want a range, and having it they do well. So far from being tender, we know no chicken will rear more easily in the winter than a Dorking having a little care bestowed upon it. None will make so much money, or secure such a certain market as a Dorking. They will not do in confinement. Cochins and Brahmans will; but it is difficult to make any satisfactory return where fowls are kept in confinement.]

POULTRY REFORM, BRAHMAS, &c.

DURING the past few weeks letters have appeared in the Journal on the above subjects. Several remedies on the causes of contention have been proposed, but there is no likelihood of any of them becoming law, as there is no tribunal in the poultry fancy to insist on their observance. I was much surprised when Mr. Wright wrote on the subject of a formation of a national poultry club, to find but one or two of the principal exhibitors supporting his proposition.

I firmly believe, if such a society were formed, it would prevent the numerous cases of tripping now reported as taking place at some of the shows. The offenders could easily be punished, and the chances of small amateurs winning prizes would be increased, as they would show oftener when they found there was a probability of the names of the trimmers being held up to the public gaze.

The "dealer" question could also be settled in the same way, though I fancy it is very severe on a man who gets his living by selling articles if he is not allowed to obtain as much as possible for those articles. The question I would ask is, "What is a dealer?"

Concerning the controversy on Brahmans I dare say there are good as well as bad laying strains. Two years ago I bought two sittings of Dark eggs, one from a noted exhibitor, the other being from birds of really good strains, and mated with a cock bought of one of the best breeders of Dark Brahmans. From the former sitting the pullets proved really good layers, both when pullets and also now as hens. The other sitting produced pullets ready to sit within a month of laying their first egg. From this it would appear that with careful breeding the really good strains may be made nearly non-sitters.

Another subject I wish to call your attention to, and I have done. Many of the birds whose portraits have appeared in Mr. Wright's poultry book, have names. Now if they have names at home, why not at the show? It would be the means of giving many good lessons to inexperienced amateurs. I will explain this. In the south-western counties there are few good shows (Bristol excepted). A year ago (in 1872) both the Dark Brahma and also the Buff Cochins which were first at the Palace were at Bristol. Now, had they been named, any one who had read the prize list in any paper would have been able to have seen the champions, and to have examined them thoroughly. Horses, cattle, sheep, dogs, and pigs are named, and their names inserted in the catalogue, then why not fowls? The single bird principle would no doubt answer best in this respect, though a pair could be named as well, and I fancy if breeders have names for their pets they should be known to all.—A WORCESTER LAD.

NEW YORK NATIONAL COLUMBIAN SOCIETY.—A meeting was held on April 9th, at 14, Murray Street, for the purpose of form-

ing a National Pigeon Society, at which Mr. W. Simpson, jun., of West Farms, New York, was chosen President, Mr. A. B. Estes, Corresponding-Secretary, with Vice-Presidents and other officers in many of the States of the Union.

ADOPTED CHICKENS.

On reading the article entitled as above in last week's impression of our Journal, it occurred to me that it might interest some of our readers were I to relate an incident in the history of adoption which took place at Laurencekirk last year. A lady residing in the outskirts of that town, a fancier of poultry, found two of her chickens close by the garden wall in an exhausted state, cold and quite wet, they had been unable to follow the hen and the stronger members of the brood, as they had never thriven like the others. Having no hen ready at the time to tend such a weakly charge, her first impulse was to place them on the rug at the parlour fire; the poor things were in the last stages of misery. On the same rug already lay in all ease and comfort the old house cat; I hate cats, but must immortalise this one. With half open eyes she watched the miserable atoms of life, and listened to the melancholy chirpings which they uttered. The eyes of the owner of the three were upon them. In a short time pussy, I can hardly write such a kindly word as "pussy," rose half up, put out her paw, and drew first one and then the other to her breast, where they nestled in her fur, and by the altered and contrasted tones of voice the chickens soon gave evidence that they had been drawn into comfort. Of course this feline wretch could neither teach them to eat nor drink as a hen could do, but these they managed themselves, carefully and tenderly nestled and defended by the cat. They by-and-bye became independent, having grown large and strong, and able to fight their way with others of their own species. The cat made many attempts to lift the chickens as she would have done a kitten, but at each time failed. This is no made-up natural history story, I can vouch for the whole facts. Whether the cat had lately lost her kittens or not I was not made aware.—J. HUE.

LARGE VERSUS SMALL HIVES.

YOUR esteemed correspondent "R. S." (page 347), speaks in most unqualified condemnation of large hives for the district in which he resides. He gives as the interior capacity of the hive which he states as "very suitable to Kirkcudbright and Wigtonshire, but, as I can testify from personal knowledge, it is too large for Haddingtonshire," one measuring $12\frac{1}{2}$ inches in width, by $10\frac{1}{2}$ inches in height, having a slightly flattened crown. Now, if my calculation is correct, this gives an internal capacity of less than 1090 cubic inches, which to my mind is so absurdly small that I cannot think it suitable to any district whatever, however poor it may be. By the same method of computation, I find the Pettigrew live, 16 inches diameter by 12 inches in depth to contain about 2040 cubic inches. The box hive which I have had very largely in use for more than ten years contains, without the frames, 2033 cubic inches. With the frames the actual comb-building space is 1610 cubic inches, but the real capacity of the hive is larger, as the spaces between the frames and the sides, top, and the bottom of the box are always crowded with bees when the population is strong. Having used these hives in three situations simultaneously, in the country, a fair honey district, in the heart of a large city, and in a garden in its immediate suburbs, I can speak most confidently as to their suitability in point of dimensions for each locality.

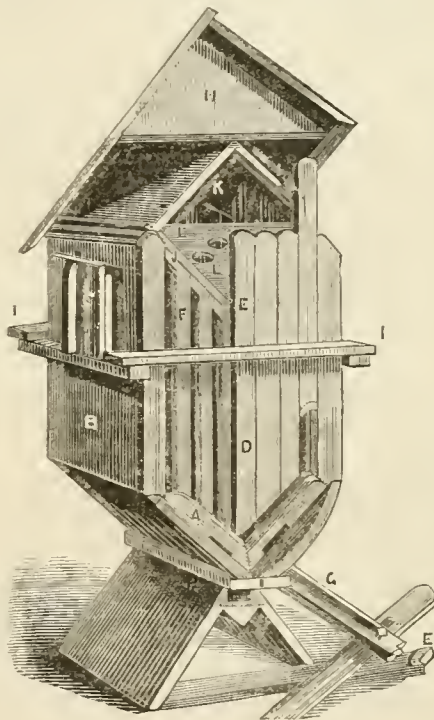
When I commenced bee-keeping, too many years ago to look back upon with entire complacency, it was with box hives of Dr. Bevan's dimensions, Cotton's diminutive collateral boxes, and small straw hives fitted for supering; and I used to think myself fortunate in obtaining supers of 20 lbs. Now, thanks to larger hives, and the bar and frame arrangement, I think little of supers under 40 lbs. or 50 lbs. weight in moderate seasons, and look for much larger in very favourable seasons.

"J. S." thinks that if large hives, such as recommended by Mr. Pettigrew, had been really advantageous for the neighbourhood of Edinburgh, Mr. Lowe would certainly have introduced them to his apiary, but he has not done so. Bearing in mind the extraordinary assertion made by Mr. Lowe, which I now quote from his own words—"Only grant the two necessary conditions—good weather and good pasturage, and strong hives—whether domiciled in a palatial hive of the most costly material and elaborate construction, if both of proper dimensions will show results, *ceteris paribus*, equally good." I cannot say that I have much confidence in the infallibility of Mr. Lowe's judgment on this point. For "a palatial hive of the most costly material and elaborate construction," read, "a properly-made and proportioned frame box-hive, or a pile of Stewarton compartments forming one hive" and for "in the simple common straw," read, "the poor little skeps commonly in use, according

to 'J. S.,' in Mr. Lowe's neighbourhood;" and I have no hesitation in asserting that we can compel our favourites to augment their sweets. The kind of hive has a very considerable influence on the results of the honey harvest. There are a few systems of hives and management, which, by equal skill shown in their several necessary manipulations, will command good and tolerably equal results; on the other hand there are hives and systems, which, by the greatest skill that can be brought to bear on them, will never prove productive or remunerative to any great degree.—S. BEVAN FOX.

ANOTHER BEE HIVE.

WE have to announce the invention of yet another bee hive, which has been patented in the United States, and which has been described in the *Scientific American*. It appears that the new hive combines improved arrangements for permitting the examination of the bees and comb frames, and also for utilising the animal heat of the insects for warming the honey and boxes. The construction is such that the objectionable space between the frames and sides of the hive, which in winter affords passage for currents of cold air and in summer becomes choked with



wax, is avoided. The parts of the floor A are at right angles and incline upon and from the centre. In the removeable sides B are openings, one of which is shown closed by the door C. The side D and that facing it are composed of narrow vertical boards E, all of which, with the exception of the middle one, are detachable. Each board is as wide as the distance from centre to centre of the comb frames F, and is provided with a rib, G, on the inside, to fit into the space between the said frames. By this means, a side is obtained which, while sufficiently light, is readily removeable, piece by piece, when it is desired to inspect the interior of the hive. The sides are held together by the cap H, and bars I; and the boards E are further secured by metal plates arranged in their upper extremities, not shown in the illustration. The comb frames F conform in shape to the angle of the floor, slightly above which they are supported by stud pins. By similar means they are separated from each other, the interstices thus formed giving access to the bees. J is the honey board, receiving the square honey box K, within the space occupied by the bees, so that it will be warmed in cold weather by their natural heat. Entrance to the latter is afforded through the holes L.

It is claimed that all the advantages of moveable comb hives are here combined without the attendant defects. Ready access to the combs, when it is necessary, is gained by removing one or more of the detachable boards—an operation which, it is clear, will not disturb the bees so much as if the whole side were, as is usually the case, displaced. There are eight separate comb

frames, each one of which, with its comb and bees, may be lifted out and transported to another hive without exposing the insects in adjoining portions except at the place of division. The inventor further states that the hive can be opened and closed without killing a single bee or causing a drop of honey to run, and that it has been proved equally adapted for purposes of artificial swarming, dividing, equalising, and other apicultural operations.—(*English Mechanic and World of Science*.)

OUR LETTER BOX.

BOOKS (*J. H. J.*).—Apply to any bookseller near you. He can obtain them.

WALSALL POULTRY SHOW.—The third prize for Cochins was awarded to pen 32, belonging to Mr. J. Bloodworth, Jersey Cottage, Cheltenham.

CROSSING THE PHEASANT AND GAME FOWL (*T. T.*).—The cross between the cock Pheasant and common hen has often been bred in England. We believe we are correct in saying it is very rare to hear of a similar one between the common cock and the hen Pheasant. We know none from our own experience. You ask the result. A hybrid deficient in beauty or brightness of colour; almost always of sombre plumage; a dusky mixture of brown and red, and sometimes nearly black; long straight tail like that of the hen Pheasant, but being self-coloured; dull spiritless expression of face; no sexes, but one bird is larger than the other, and hence they are called cock and hen. The only object the so-called cock has in view is to watch the laying hens, and take to sitting as soon as one has laid an egg. We think it a waste of time, food, and birds to produce them.

BLACK COCHINS (*E. S.*).—It is easier to describe the points of Black Cochins than to tell you where they may be had pure. If we can find the address in time for the press we will send it. The points are the same as the other colours of this breed. They must not be vulture-headed. The great difficulty is to get the cocks pure-coloured. It is almost impossible to get thoroughly black plumage in adult cocks. Some throw white, some red feathers, but hardly any pure black. We had much to do with them some years since. It was then said they were accidentally produced by a cross between Buff and White. We have since imported them. The under feather of the Black cock is always white; his back and saddle are frequently, we may say generally, mixed with red and white. We never saw a purely black adult cock in our lives, nor do we expect to. The pullets and hens were always black. It was a great point formerly to set them with bright yellow legs. This was difficult, except in chickens. Like the Whites, the bright yellow disappears with maturity.

BUMBLE FEET (*A Constant Reader*).—Dorkings and Crève-Cœurs are more subject to bumble feet than any other breed, but it is generally when they get old and very heavy; also, when they are allowed to roost at will, they always choose high perches. But, after all, the disease is quite the exception, and cases are very rare now as compared with former years. We have never had it in chickens, and we are disposed to think yours with the split ball has accidentally cut it. In bumble foot the skin is never broken except in the case of an old bird. If your birds perch high, give them lower perches. If the flooring of their house is of ashes or anything that may cut or peirce the tender skin of a chicken's foot, alter it, and lay down gravel or road grit.

MOVING SITTING HENS.—Having been informed that when a hen in her sitting has been taken off her nest and removed to another, more convenient, that she will forsake it, I tried the experiment, and moved four hens at night to other nests, and every one continued sitting very well, and have hatched (two Brahmas, one Cochins, and one crossed Game and Dorking).—*EXPER.*

DEAF-EARS AND RED COMBS (*Subscriber*).—The white deaf-ear and the bright red comb depend much on condition, but it is necessary to add, no amount of condition or health will make a red deaf-ear white. It is one of the characteristics of high breeding, and is only developed by health. Neither of the breeds you name will benefit by shutting-up, but that which will bear it best is the Malay. You must show them in very hard feather, and you will help this by feeding on some white peas once per day. Choose the comb flat and well fixed on the head, the tails drooping, the crop, throat, and wing ends bare. Your Spangled Hamburgs must have well-made combs, quite firm on the head, and well piked, well spangled breasts, and clear tails well mooned. They must have white deaf-ears. The Black Bantams should be small, close-feathered, white deaf-ears, and the cocks should have long sickles. Do not shut them up. Feed on ground oats soaked with water twice per day, morning and evening. Give table scraps and odd pieces for a mid-day meal. We know no Spangled Bantams. The Sebrights, Golden and Silver, are laced—*i.e.*, every feather is edged with black, if spangled it would be merely tipped, and the bird would be worthless. Laced Bantams when they are bred out become spangled.

BRAHMAS' NESTS (*A Beginner*).—Brahmas' nests require to be like others. The nest itself should be straw, put either in a basket or in a butter-tub with the head knocked out, and if the bottom also so much the better, as nests are always healthier and cleaner when they are on the ground. Lids or covers must be provided, as a sitting hen should always be shut in. It not only prevents her from sitting badly, but it secures her from interruption from other fowls. The eggs should be plentifully watered for eight or ten days before hatching. You may keep eggs for a fortnight or three weeks, and they will then hatch, but it is always thought the fresher the egg the stronger the chicken.

EGG WITHIN AN EGG (*Gardener*).—We are much obliged by your note and drawing, but it has been so frequently noticed as no longer to cause surprise.

NAT FLIGHT.—It is some time since we heard anything of Macclesfield Tipplers. We do not at present know of any. The last we saw were at Birmingham.

PIGEONS AT THE DUBLIN SHOW.—We not only have several letters disputing our "Correspondent's" report, but also his reply to Mr. Staunton's note. The report we believe to have been unbiased, and we must decline inserting any more letters on the subject.

PARROT'S DIGESTION DISORDERED (*C. D.*).—You should for a few days discontinue to give the Parrot any water at all, and instead put in its water-tin a little bread soaked in cold milk, and sweetened with a little sugar. If

the bird will not eat this, some rice boiled in milk and sweetened should be put in cold in the place of the sop. Perhaps "C. D." will let us know exactly what food is given to the bird, that we may be able to tell what causes the sickness.

BEE PASTURAGE (*An Old Subscriber*).—Lime trees wherever they grow afford honey. Honey-dew is the same everywhere—an exudation from the leaves. Bees certainly fly to pasturages four miles distant from their hives, but they confine their flights to a much smaller distance if honey is there to be obtained.

MET EOROLOGICAL OBSERVATIONS,
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
1873. April and May.	Baromet- er at 39 inches and Sea level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 2 ft.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
Inches	deg.	deg.		deg.	deg.	deg.	deg.	In.			
We. 30	30.150	52.3	47.9	N.W.	46.8	58.6	38.1	94.1	33.4	—	
Th. 1	30.116	59.5	54.2	N.W.	48.0	67.3	50.1	113.8	45.2	—	
Fri. 2	30.059	58.0	53.8	N.W.	49.9	66.9	41.0	118.1	35.3	—	
Sat. 3	29.689	54.6	47.6	N.W.	51.1	61.0	41.8	118.0	39.0	0.026	
Sun. 4	29.749	46.1	42.5	N.	50.8	58.5	41.0	107.0	40.8	8.136	
Mo. 5	29.530	47.6	46.5	S.W.	50.8	55.2	41.8	95.5	40.0	0.188	
Tu. 6	29.542	49.0	44.5	W.	49.4	58.8	39.9	118.9	36.2	0.020	
Means	29.835	52.4	47.7		49.5	60.9	42.1	108.1	38.6	0.290	

REMARKS.

30th.—Rather dull morning, and very dull all day; slight shower at 4.30 P.M.

May 1st.—Fine morning, fine and bright throughout the day.

2nd.—Another beautiful day; it looked rather stormlike between 6 and 7 P.M., but soon passed off.

3rd.—Fine morning, wind rather strong, and cold sharp shower at 0.15 P.M.; hail for a short time from 1.15 P.M.; very stormlike between 5 and 6, but no storm here, and fine afterwards.

4th.—Fair, but rather dull; rain at 11 A.M. and between 3 and 4 P.M.; fine evening, lunar halo at night.

5th.—Rather dull, rain in early morning and cold after.

6th.—A very fine morning, and so continued all day.

The earlier part of the week was much warmer than the previous one, though not so hot as some days in April. The latter part has again been cooler under the influence of northerly winds and occasional showers.—*G. J. SYMONS.*

COVENT GARDEN MARKET.—MAY 7.

PRICES remain nearly as last week, and the supply is well kept up. Vegetables coming very much better, and the Continental ones have also very much improved during the past week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	sieve	3	0 to 5	0	Mulberries.....	1	lb.	0 0 to 0 0
Apricots.....	0	do.	0	0	0	Nectarines.....	do.	0	0 0 0
Cherries.....	4	box	4	0	8	Oranges.....	4	100	4 0 10 0
Chestnuts.....	0	bushel	0	0	0	Peaches.....	do.	18	0 30 0
Currants.....	1	sieve	0	0	0	Pears, kitchen.....	do.	1	0 3 0
Black.....	do.	0	0	0	0	dessert.....	do.	6	0 12 0
Figs.....	do.	0	0	0	0	Pine Apples.....	lb.	8	0 12 0
Fibers.....	lb.	0	0	0	0	Plums.....	1	sieve	0 0 0
Cobs.....	lb.	2	0	2	6	Quinces.....	do.	0	0 0 0
Gooseberries.....	quart	1	0	2	0	Raspberries.....	lb.	0	0 0 0
Grapes, hot-house.....	lb.	8	0	15	0	Strawberries.....	4	oz.	0 6 1 6
Lemons.....	4	100	6	0	10	Walnuts.....	bushel	15	0 30 0
Melons.....	each	8	0	15	0	ditto.....	4	100	2 0 2 8

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0 to 6	0	Mushrooms.....	pottle	0	0 to 2	9
Asparagus.....	4	100	4	0	0	Mustard & Cress.....	punnet	0	2 0 0
French.....	6	12	0	0	0	Onions.....	4	bushel	3 0 0
Beans, Kidney.....	4	100	1	6	2	pickling.....	quart	0	6 0 0
Beet, Red.....	doz.	1	0	3	0	Parsley per doz. bunches	0	0	4 0
Broccoli.....	bundle	0	9	1	6	Parsnips.....	doz.	0	9 1 0
Cabbage.....	doz.	1	0	1	6	Peas.....	quart	6	0 10 0
Capsicums.....	4	100	0	0	0	Potatoes.....	bushel	6	0 9 0
Carrots.....	bunch	0	6	0	0	Kidney.....	do.	0	0 0 0
Cauliflower.....	doz.	3	0	6	0	Round.....	do.	0	0 0 0
Celery.....	bundle	1	6	2	6	Radishes.....	doz. bunches	1	0 1 8
Coleworts.....	doz. bunches	2	6	4	0	Rhubarb.....	bundle	0	6 1 0
Cucumbers.....	each	0	6	1	6	Salsafy.....	4	bundle	1 0 1 6
pickling.....	doz.	0	0	0	0	Savory.....	doz.	2	0 8 0
Endive.....	doz.	2	0	0	0	Scorzoneria.....	4	bundle	1 0 1 0
Fennel.....	bunch	0	8	0	0	Sea-kale.....	basket	1	0 2 6
Garlic.....	lb.	0	6	0	0	Shallots.....	lb.	0	3 0 6
Herbs.....	bunch	0	8	0	0	Spinach.....	bushel	2	8 8
Horseradish.....	bundle	2	0	4	0	Tomatoes.....	doz.	0	0 0 0
Leeks.....	bunch	0	2	0	0	Tureps.....	bunch	0	8 0 6
Lettuce.....	doz.	1	0	2	0	Vegetable Marrows.....	0	0	0 0 0

POULTRY MARKET.—MAY 7.

THERE are indications of a partially increased supply of certain goods. We are looking for them, as the present high prices being caused entirely by scarcity, are beneficial to no one.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	6	0	to 6	6	Pheasants.....	0	0	to 0	0
Smaller ditto.....	4	6	5	0	Partridges.....	0	0	0	0
Chickens.....	3	0	3	6	Hares.....	0	0	0	0
Goslings.....	7	6	8	0	Rabbits.....	1	5	1	9
Game Fowls.....	4	0	4	0	Wild ditto.....	0	9	0	10
Duckings.....	3	6	4	0	Pigeons.....	0	9	0	10

WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 15—21, 1873.	Average Tempera- ture near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon sets.	Moon's Age.	Clock after sun.	Day of Year.		
	Th		Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	Days.	m.	s.
16	F	Royal Botanic Society's Show closes.	64.8	40.7	52.7	15	10	47	50	11	45	5	19	3	53
17	S	Crystal Palace Show.	66.0	43.3	54.1	15	8	4	44	7	morning.	42	6	20	3
18	SUN	5 SUNDAY AFTER EASTER.	65.7	41.0	53.4	16	7	4	45	7	42	0	57	7	21
19	M	Cambridge Term divides.	66.2	42.2	54.2	17	5	4	47	7	19	1	21	9	22
20	Tu	Zoological Society's Meeting, 8.30 P.M.	67.0	42.7	54.9	14	4	4	48	7	45	1	48	10	23
21	W	Royal Horticultural Society's Fruit, Floral, and General Meeting.	66.9	43.4	55.2	20	3	4	50	7	5	2	after.	24	3
			66.3	41.7	55.5	19	2	4	51	7	23	2	59	1	25

From observations taken near London during forty-three years, the average day temperature of the week is 66.1°; and its night temperature 42.5°. The greatest heat was 89°, on the 15th, 1833; and the lowest cold 25°, on the 15th, 1850. The greatest fall of rain was 0.76 inch.

EVENING MUSINGS FOR PLAIN PEOPLE.—No. 4.

VINES AND OTHER TOPICS.



N previous evenings consideration has been given to the different classes of plants suitable for culture under the shade of Vines, and if so cultivated they cannot fail to give pleasure. I will now notice what, in conjunction with Vines, cannot fail to give profit and which entail the least possible amount of skill in management.

It is an admitted fact that the last ten years have witnessed extensive erections for Vine-culture by way of profit, partially or solely. Public inclination is still growing in this direction, and even many tradesmen have a disposition to give some of their spare time to an exercise which they deem enjoyable, and especially if it is profitable. One can hardly err in encouraging a disposition of this kind, both on account of the fuller supply of the best of all fruits at a reasonable price for town and city consumption which will result, and also in fostering home pursuits pure and pleasurable in their nature. As it may be more practical to muse on what has been done, rather than what may be done, I will give a brief history of the beginning and completion of a structure for Vine-culture, with a notice of the general results not merely attainable but actually attained.

Five years ago a neighbour solicited my advice in the matter of building a vinery on a plot of ground, which by many years of hard work he had won as his own. Like many others, he wanted to see his way to a little gain rather than loss by his undertaking. He had no doubt as to the Vines eventually being remunerative; but what until they became so, and what of the lost space in the house? If I could tell him how to turn to account and utilise to a profit this space at once he would commence building forthwith. The house, a lean-to, with a 19-foot rafter, and nearly 70 feet long, was, to him, no small undertaking. It is erected, is in full profit, and is a success, but not until after some failures.

It may be useful to notice these. The first was a Cucumber failure. Owing to the length of rafter a purline was necessary. This is supported by a row of pillars. These were made the framework for a temporary trellis on which to grow a hedge of Cucumbers. The height, 12 feet, and length approaching 70 feet, were calculated to carry a large amount of fruit. This was to give the first interest on outlay pending the growth of the Vines. A ridge of good soil was provided, and stout plants put in it at the end of May. He had instructions respecting airing, watering, and syringing, and especially as to fresh applications of soil as the roots reached the surface. The progress of the plants was remarkable, the trellis was covered with luxuriant growth, hundreds of fruit were swelling, several had been cut. A reward appeared certain. Perhaps the freer growth begat negligent attention; at any rate he forgot to add sufficient soil to the roots or to water them thoroughly, and a burning day in August gave the plants the *coup de grace*. When the

patient was dead he ran for the doctor. On arriving, the soil was beautifully moist at the surface generally, but in a puddle round the stems. Underneath it was dry as dust, and the extremities of the roots—the feeders—were shrivelled and dead. It was man—well, not quite—but Cucumber slaughter, certainly. A few recovered, but the loss was signal. Had he acted exactly according to instructions that crop of Cucumbers would have paid him better interest on his outlay than any building he had before erected, and such were not a few; but he deviated, slightly as he thought, but ruinously. From such slight deviations, slipping instructions, not fully and completely carrying out orders, a presumptive superiority of knowledge—arise failures generally. Young gardeners may think of this and believe it to be true. Old gardeners know there is no doubt about it. Negligence of what is erroneously regarded as little things is the root of half, and more than half, the evils that flood the world. The old tale of master and coachman is suggestive. "How near can you drive to danger?" "A foot, sir." "And you?" "An inch, sir." "And you?" "I drive as far off as I can, sir." "You are the man for me." He who makes friends with risk and chance is in dangerous company. He who would achieve success must act precisely, exactly, and at the right time. It may be useful for young professionals and inexperienced amateurs alike to keep this in mind. To be safe, drive as widely as possible off danger. To succeed, adhere rigidly to instructions. Do not say of an apparently simple order, "There is no sense in it;" it will be far more sensible to accept it as necessary and carry it out. When a man, by inattention, only loses his own, as in the case of the Cucumbers, it does not so much matter; but how many men—young men—have the property and reputations of others in their keeping? On these it is absolutely incumbent to act in strict obedience—accurately, promptly, cheerfully, and correctly.

By incorrectly or only half obeying instructions my pupil lost his Cucumbers, but by the same cause had a far greater loss than this in his essay at Grape-growing. That loss will be noted by-and-by. He has surmounted both and succeeded. I have no occasion now to tell him twice over what to do. A hint is no sooner given than acted on; he has bought experience by failure, and finds it no longer safe to play experiment with necessary advice. If he had done this first instead of last, it would have put pounds in his pocket. Too many find the same thing out only when "too late."

After recording a failure I will now record a success. On clearing out the withered Cucumbers the soil was levelled, and other good material mixed in, and in the autumn the entire border was planted with early Potatoes, and sowed over with Radishes. The success of this in the spring was a complete atonement for the Cucumber massacre. Besides the pleasure of tending a prosperous crop, it brought interest for the money—a good return on capital invested in the erection. Up to the present time the owner continues the Potatoes. Although the Vines cover the roof and carry hundreds of pounds of Grapes

yet he has his crops of roots cleared off and sold before his Vines are in bloom, and this spring he has sold thousands of Radishes at 7d. per score, and Potatoes at 3s. per pound. That is making a viney pay without the Grapes, of which there will soon be 400 to 500 lbs. ready to eat and sell. These Vines are very tractable, and require no removing from the roof to break regularly. They start at the bottom first, and when the bunches nearest the root are thinned and swelling, those at the tops of the Vines are just setting their fruit. I am now interrupted, and will resume another evening.—J. WRIGHT.

THE FORESTS OF NEW ZEALAND.

THE primeval forest has indescribable charms for the naturalist. There generations of venerable trees hasten to their decay, and more youthful saplings shoot joyously up around the old moss-clad patriarchs. The almost death-like stillness which prevails in these regions makes a deep impression upon the mind. Not a sound is audible save from time to time the dull thud of a falling tree or the shrill scream of a bird of prey, for the song-birds enliven with their notes only the outskirts of the forest, and never visit its gloomy interior. Whilst the deepest quiet reigns around the graves of the fallen trees, the foliage of their living brethren is like a vast sea, continually moved by the wind.

Almost all the indigenous trees of New Zealand are clothed with evergreen foliage; and as the colouring of the leaves presents a great variety of hues, this peculiarity contributes much to the beauty of the landscape. It is also to this circumstance that the comparatively great scarcity of timber-yielding trees in New Zealand is to be attributed, since the quality of the wood is deteriorated by the continuous flow of sap. It is in spring, not in autumn, as in Europe, that the New Zealand forests present the greatest variety of light and shadow, for the budding leaves display far brighter colours than those which have for some time attained maturity. Upon the whole, the forest bears an exceedingly tropical aspect, and unfolds its greatest beauties in the underwood, which possesses those luxuriant forms of leaf and blossom, and that freshness of colouring, which are only to be found in the warm zones. It is upon the outskirts of the forest especially that vegetation attains its highest development, and it is there that the plants characteristic of New Zealand—viz., the Fern tribe, appear in their grandest forms. There the graceful tree Ferns with their delicate trunks covered in the most uniform manner with the triangular marks of the decayed leafstalks, attain a height of 20 or 30 feet before spreading out their picturesque crowns with their finely shaped leaves. There the majestic Nikau extends its Palm-like shade; there the Tree Fuchsia displays its gorgeous clusters of blossom and well-flavoured fruit; there flourishes the Laurel-like Kawaka, with its dark green waxy leaves and bright yellow berries; and there is the sweetly fragrant Manukau and the slender Poroporo.

The mountainous structure of New Zealand and its essentially insular climate are the primary causes which render its forests so devoid of variety in shape and formation. There forest, and woodland, and meadow do not alternate as in Australia; there one does not perceive those isolated clumps of trees which have, not inappropriately, been termed "wood islands;" and finally, the individual varieties of trees and other plants have not there an opportunity to develop their characters freely and uniformly.

If the traveller desires to penetrate into the interior of the forest he will find his progress attended by many difficulties, if not altogether stopped by the density of the underwood, through which in many places it is necessary to cut a way with the hatchet. Innumerable varieties of leaves, twisted into the closest network, stretch from tree to tree, forming dangerous snares for arms and feet. Shoots of every species mingled with strong runners, creeping plants with sharp prickly leaves and thorns, rotten branches, and fallen trunks—all these form natural barriers, which are only to be surmounted by the greatest trouble and determination. In many places the traveller will sink knee deep in the soil by accidentally treading upon the grave of one of the forest giants. Grasses and Mosses are rare, and only found upon open spots, as their growth is choked by the Ferns, which thrive luxuriantly everywhere, even in places where the sun's rays never fall. Forest flowers are never to be found upon the damp overshadowed ground, but generous mother Nature has supplied their place by a flora which, firmly rooted in the trunks of the old trees, unfolds its gorgeous blossoms high over the

earth. The kinds of Orchids are numerous and rich. Rare indeed is the large tree upon whose trunk they do not grow, and from whose branches they do not hang down in green garlands, enveloping their gay flowers in luxuriant foliage. The immense tips of the trees and their density render it impossible for the sun, even in midsummer, to exercise its due influence upon the atmosphere of the forest; even at noon a greenish twilight and a low temperature prevail in its depths.

In open places—i.e., where the parasitic plants have not obtained a firm footing, and where the spectator has a wider view, a stupendous spectacle is presented to the eye. The thickly-standing trees with their massive pillar-like trunks and their green peaked tops, give to the entire scene the look of a huge old temple with an aerial dome through which the light of day but scantily penetrates. But, on the other hand, a peculiar uncomfortable feeling takes hold of the spectator. The whole atmosphere seems impregnated with damp, and the earthy smell and cold slimy temperature produce an oppressed feeling in the chest, which is only to be removed by sunlight and warmth.

The majority of the trees shoot-up straight and branchless for a considerable height, and then spread out more or less regularly their huge crowns, which are always composed of the densest foliage. A strange peculiarity is presented by many trees which divide into branches either far surpassing, or, at least, equalling in size the parent trunk; this feature gives the tree an unnatural appearance, and by no means tends to beautify it.

Although amongst the forest trees of New Zealand there are at least forty kinds which at a certain strength of growth attain a height of 100 feet and above, yet, as has been said, there are comparatively few among them which deserve the name of timber trees, and as such possess a high value. These I will briefly name before proceeding to a description of the more useful and better-known kinds:—Aka, Akeake, Kinan, Kahikatea, Kauri, Kawaka, Kohai, Kohekohe, Maire, Mangiao, Manukau, Mapau, Matai, Miro, Puhinukawa, Pukatea, Puriri, Rata, Rewarewa, Rimu, Tanekaha, Taraire, Tawa, Tawhero, Tawhia, Tipau, Titoki, Titongi, Tortoa, Totura, Towai, and Uharangipiron.

The Kauri (*Dammara australis*), is from its majestic appearance justly styled the giant and king of the New Zealand forests. Its usual height varies between 99 and 165 feet, but it has frequently been met with as high as 198 feet. The thickness of its trunk is in symmetrical proportion to its height; a diameter of 8 feet 2 inches, or 9 feet 10 inches, is by no means rare. What lends the tree its greatest beauty is, that its trunk, usually as straight as an arrow and undisfigured by any excrescences or decaying branches, attains more than two-thirds of its height before putting forth its colossal boughs. Like the Pine tree it is usually met with in extensive forests, but it is also frequently found amongst other trees in the primeval forest. From the summit of a high hill the traveller may see the conical tops of these trees rising like islands from the green sea of foliage. The bark of the Kauri is quite smooth, $1\frac{1}{2}$ inch thick, and of a silver-grey colour. The leaves bear a striking resemblance to those of the Box tree, are of a dark green colour, which becomes yellowish upon the reverse side, and are $1\frac{1}{2}$ inch long by 1 inch broad. They grow pair-wise upon the ends of the small twigs. The tree bears cones from 2 to 4 inches in length. These are simultaneously found in the most different stages of development, so that it is impossible to assign the flowering season to any particular month of the year. It is the only indigenous Conifer of New Zealand. All parts of the tree contain large quantities of a peculiar kind of resin, which when it flows from the wood is quite transparent, of a white colour, and strongly opalescent; with age it acquires a beautiful amber colour. The resin is rather brittle than hard, is easily crushed, is of a bitter astringent taste, and possesses a very small specific gravity. It is very inflammable and burns with a bright flame, giving forth thick clouds of smoke. This Kauri gum, as it is called, is frequently found in large quantities at a depth of 3 or 9 feet underground, upon the eastern slopes of the hills, which in early times must have been almost all clothed with Kauri forests.

Of late years this gum has become an important article of exportation for New Zealand, as it is much employed in the manufacture of varnish, and in this respect has entirely superseded copal. Its price in the European markets, of course, depends wholly upon its quality, and varies between £10 and £120 per ton. These high prices have naturally made gum-

digging an important department of colonial industry; it is, however, a very wearisome occupation, requires much patience, and the results depend entirely upon chance. The rosin which flows in astonishingly large quantities from the trunk and stump of a freshly-felled tree has scarcely any value in commerce, as it is impossible to congeal it either by artificial heat or otherwise without destroying its essential properties; yet when submitted to a process of distillation it yields a superior sort of oil resembling spirits of turpentine. The leaves of the tree also contain a fine ethereal oil. The trees are usually felled shortly before the beginning of the rainy season, and cut upon the spot into logs of from 20 to 32 feet in length. The mountainous nature of the country renders their transport to the coast impossible for cattle, and, consequently, the vicinity of a mountain stream is always selected as the basis of operations. Across the mouth of this stream, which flows either into a larger river or directly into the sea, a strong dam is constructed in order to gather all the water. When all the timber required has been cut down and rolled into the valley, and if there is water enough to float it off the dam is opened and the logs, often many thousands in number, shoot down into the larger creek or direct into the sea, whence they are then conveyed to the respective saw-mills. It frequently, however, happens that the dam has not been sufficiently secured, or that too much water has gathered and a premature departure of the logs takes place. In such cases the loss to the owners is often very heavy, as the logs are driven far out to sea, or, perhaps, entirely lost.

The first rank amongst the timbers of New Zealand is held by that of the Kauri. It is usually divided into two sorts, red and white. Like almost all the timbers of the country, it possesses the peculiarity of contracting or expanding in length as well as in breadth with the various changes in temperature. When converted into planks the wood has in general a smooth compact appearance, free from all knots and scars, and is of a very close grain. The quantity of rosin contained by it causes it, especially the red variety, to give way rapidly under strong pressure. On account of this brittleness it is not easily worked, and requires to be well seasoned before being cut up, especially if the tree has not been thoroughly "bled." It requires to be particularly sorted for joinery, which trouble, however, is richly rewarded, as pieces are to be found which in beauty of grain and wavy lines far surpass mahogany, and also take on a fine polish. For naval requirements there is scarcely any other tree which can be compared with the Kauri. For these purposes it is exported in great quantities, as its durability, its length, and its elasticity have procured for it the first place in the favour of ship-builders.—X.

AURICULAS AT SOUTH KENSINGTON ON MAY 7th.

The very exceptional character of the season may be gathered from the fact that while, as a rule, Auriculas are at their best about the 20th of April, there were so few exhibited at the last meeting. At this meeting three weeks afterwards there was a very good collection, and as far as I am personally concerned I can safely say I never remember such a time. Two of the plants I exhibited to-day were shown three weeks ago, and of some kinds, such as Richard Healdy and Lancashire Hero, I had only one plant to send. The only regret one can feel is that there are not more competitors; and if people would only believe that a simple and natural course of treatment will insure for them good and healthy plants, I think there would be a larger number of persons taking pleasure in the growth of one of our most beautiful and refined flowers.

Mr. Turner, of Slough, exhibited as usual a large number of wonderfully fine plants, grown very strongly, and many of them in consequence, to a critical eye, out of character. There can be no doubt that if they are grown too strongly the body colour, as it is called, becomes larger and the flower coarse, and that refinement which in the eye of a connoisseur is one of the great charms of an Auricula, is done away with. An exceedingly beautiful purplish blue self, called after our lamented friend Charles Perry, was amongst his collection, and obtained a first-class certificate. It is of fine habit, and novel in colour; the paste is a little too angular, but in all other respects it is a first-rate flower. The fine green-edge, Alderman Wisbey, which he exhibited last year, was in good condition, and will be a valuable addition to that somewhat limited class. Colonel Champneys maintains its character as a first-

rate stage plant, although wanting in some of the points necessary for a show flower; there is too much colour, and the colour is apt to run out to the edge, but there is such an attractiveness about it that it will be sure to be a favourite for the home stage, especially as it has such a good habit and constitution. Charles Edward Brown, which I myself exhibited, and to which a first-class certificate was awarded, is a seedling of Mr. Headly's, the raiser of George Lightbody, and is a flower of great refinement. It was sent out by the late Mr. Lightbody a year or two before his death, but has never been exhibited in the south before. It is unquestionably one of great merit, very smooth and circular, the eye and paste both good, and the colour well defined; it was also exhibited by Mr. James, but not in good condition. Lightbody's Sir Charles Napier was shown in a good state; it is a peculiarly neat flower, with a well defined grey edge, and in this state is deserving of a very high place in the florist's estimation. I sent up with the plant of Charles Edward Brown a very extraordinary bloom of Fletcher's Ne Plus Ultra, for which I cannot account. It was a truss of five pips, each pip measuring more than 2 inches across, with an immense amount of colour and great coarseness of texture. I do not grow my flowers richly, never give them any liquid manure, and I think I may say that their general condition is not so much of size as of great refinement. This plant received the same treatment as the rest, and yet it produced this truss, which anyone would have pronounced to be the effect of over-stimulating; but the strange thing is that the plant did the same last year, so that it is one of those sports for which there is no accounting. Popplewell's Conqueror, an old and generally coarse flower, I had very good; in fact, a veteran in Auricula-growing, Mr. Butcher, of Camberwell, told me that he had never had it so good and refined. The best of all those shown was George Lightbody, as, indeed, it was last year, and I question if ever a flower will be raised to beat it. I had another curious flower in my lot, a perfect gem, Lancashire Hero, which generally comes as a grey-edge, but was in this case a pure pale green.

It was gratifying to Auricula-growers to see the manner in which the flowers were admired by those who were without the pale, but who were attracted by the peculiar beauty and singular colouring; and although many of the observations were such as made one smile, yet it could not be maliciously, for their expressions were the index of true admiration. Let us hope the time may come when there shall be such gatherings for competition as one remembers in early days, when the "Horns" at Kennington used to be filled with eager exhibitors and appreciative visitors.—D., Deal.

BESSIE JOHNSON ROSE.

In a recent issue of your valued paper some remark was made to the effect that the new Hybrid Perpetual Rose Bessie Johnson was too similar in colour to Abel Grand. Being myself a grower of Roses and successful exhibitor, and having had abundant opportunity of judging as to the distinctness of this truly beautiful and sweet Rose, allow me to state that I have seen it at the Devon Rosery in quantity, both under glass and in the open air, side by side with Abel Grand, and can assert that it is quite distinct from that Rose, being a true pale blush in hue, between La France and the superb but scentless Madame Rothschild. It is superior in shape to Abel Grand, and surpassingly fragrant. I feel sure Messrs. Curtis will exhibit their beautiful Rose at the Crystal Palace, so as to fully settle the question of its distinctness. Bessie Johnson will, undoubtedly, prove a great acquisition and a general favourite, it has so many desirable qualities—size, colour, extreme sweetness, hardiness, and a fine habit, never giving a barren shoot.—ROBERT ROBSON, Torre Park, Torquay.

THE ROYAL HORTICULTURAL SOCIETY'S SHOW AT BATH.

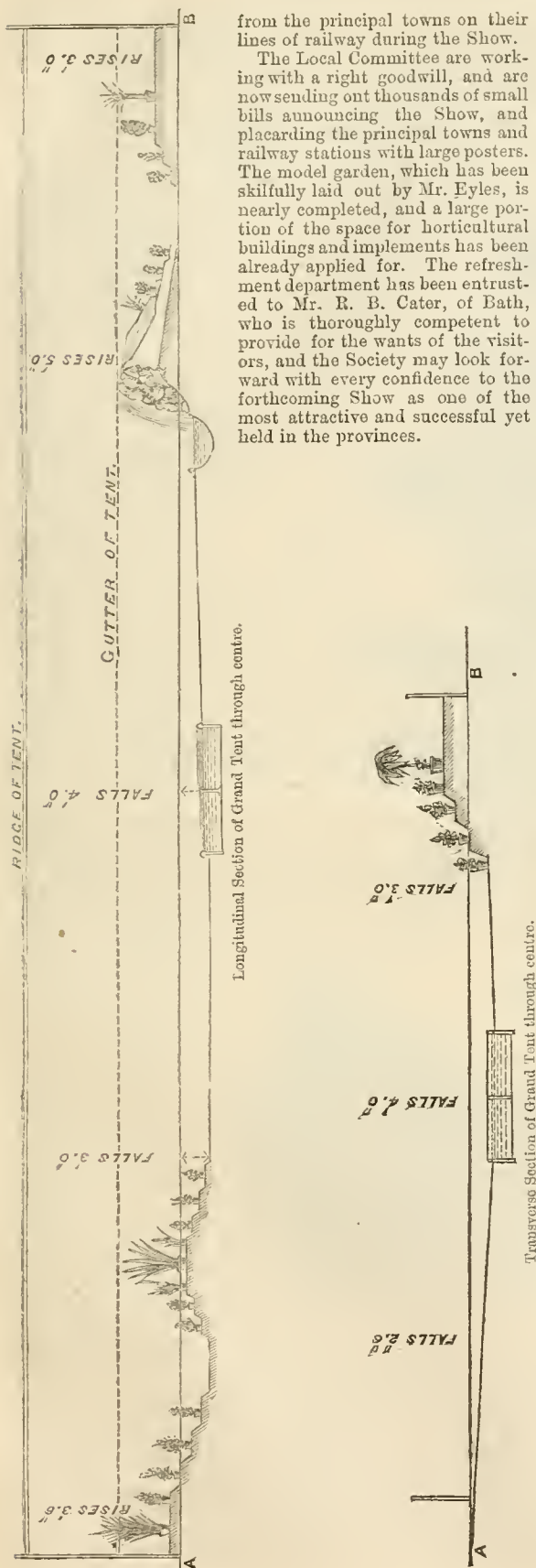
THE Royal Horticultural Society's show-ground, of which the accompanying engravings are the plan and sections, is situated in the Royal Victoria Park, Bath, in the midst of one of the most favoured spots for picturesque beauty in the west of England. It occupies an area of about 13 acres, and is on the western side of the city, about a quarter of a mile from the new station of the Midland Railway Company, and three-quarters of a mile from that of the Great Western. It is the intention of both these Companies to run excursion trains



GROUND PLAN OF ROYAL HORTICULTURAL SOCIETY'S SHOW GROUND AT BATH.

from the principal towns on their lines of railway during the Show.

The Local Committee are working with a right goodwill, and are now sending out thousands of small bills announcing the Show, and placarding the principal towns and railway stations with large posters. The model garden, which has been skilfully laid out by Mr. Eyles, is nearly completed, and a large portion of the space for horticultural buildings and implements has been already applied for. The refreshment department has been entrusted to Mr. R. B. Cater, of Bath, who is thoroughly competent to provide for the wants of the visitors, and the Society may look forward with every confidence to the forthcoming Show as one of the most attractive and successful yet held in the provinces.



REFERENCES TO GROUND PLAN AND SECTIONS.

- 1, 1. Entrances.
2. Tent for Fruit and Cut Flowers.
- 3, 9. Band-stands.
- 4, 4. Promenade Ground.
- 5, 5. Light Refreshments.
6. First-class Refreshments.
7. Ladies' Room.
8. Grand Tent for Show, 260 feet by 130 feet.
9. Office.
10. Council Room.
11. Tent for Table Decorations.
- 12, 12. Horticultural Buildings.
- 13, 13. Horticultural Implements.
14. Carriages and Implements.
- 15, 15. Refreshments.
- 16, 16. Gentlemen.
17. Lake.
18. Second-class Refreshments.
19. Cottagers' Tent.
- A B. Ground Line.

ROYAL BOTANIC SOCIETY'S SHOW.

MAY 14TH AND 15TH.

THIS is one of the best of the May Shows that have been held at the Regent's Park of late years. Some of the collections are remarkably fine, there are few to which exception can be taken, and the arrangement is excellent. On the forenoon of the opening day their Majesties the King and Queen of the Belgians, together with their Highnesses the Duke of Teck and the Princess Mary, made a lengthened inspection of the Show.

In stove and greenhouse plants Mr. Baines, gardener to H. Micholls, Esq., Southgate, took the foremost place, both for groups of nine and for six. In these *Anthurium Scherzerianum* with twenty-eight spathes; several *Eriostemons*; *Erica ventricosa coccinea minor*, 5 feet in diameter and covered with blossom; *Azalea Magnificans*, a snowy mass nearly 6 feet high; *Ixora coccinea* with superb heads, some of them 8 inches in diameter—these form objects well worthy of Mr. Baines's name, and are conspicuous among a lot of plants admirably grown and splendidly flowered. Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, is second for nine; and Mr. Chapman, gardener to J. Spode, Esq., takes the corresponding position for six. In the nurserymen's class for the same number Messrs. Williams, Rollison, and W. Cutbush are the prizetakers.

Azaleas are very well represented in a collection from Mr. Chapman, including closely trained but beautifully flowered specimens of *Léopold I.* and *Juliana*, and in groups from Mr. Turner, Messrs. Jackson & Sons, Ivery & Sons, and Lane. Messrs. Lane and Mr. Rowe, Roehampton, have excellent groups of *Rhododendrons*; while in *Heaths* Messrs. Ward, J. Wheeler, G. Wheeler, and Jackson & Sons take the lead. Show *Pelargoniums* are not on the whole nearly so fine as we have seen them.

Roses were noticed fully last week in the report of the Show at Kensington, and, as might be expected, most of the finest specimens there exhibited again put in an appearance. Mr. Turner, of Slough, and Messrs. Paul & Son are first in groups of six and nine respectively, while for twenty the awards went to the same exhibitors and Messrs. Veitch.

Of *Orchids*, Mr. Ward, Mr. Hill, gardener to R. Hanbury, Esq., The Poles, and among nurserymen Mr. Williams and Mr. Bull, have good groups, for which they are placed in the prize-list. In Mr. Williams's group is *Cypripedium caudatum* with nineteen flowers, and a fine mass of *Cypripedium barbatum superbum*. The best single specimens of *Orchids* are *Dendrobium infundibulum* from Messrs. Jackson, *Cattleya Mossiae* from Mr. James, and *Phalaenopsis grandiflora* from Mr. Chapman, all of which are excellent.

Mr. Ware, of Tottenham, sends collections of *Liliaceous* plants, hardy herbaceous plants, fine-foliaged and flowering plants, cut blooms of *Fancy Pansies*, and a charming horseshoe group of flower-garden plants near the fountain in the centre of the tent, and producing an admirable effect. For this a first prize was awarded; and first-class certificates were likewise granted to the same exhibitor for *Polyanthus Parisina*, *Pansy Pluto* almost black, and yellow *Polyanthus Cressus*.

Messrs. E. G. Henderson likewise exhibit a collection of flower-garden plants arranged for effect, including numerous *Tulips*. Certificates were awarded to that firm for *Aralia Sieboldi aurea reticulata*, with pale yellow variegation, and for *Canna Tricolor* with cream-coloured variegation, and the blade of the leaf edged with red. Mr. Turner sends *Lilium auratum* in fine bloom; Mr. C. Noble his new *Clematises*, among which Mrs. V. Lister had a first-class certificate.

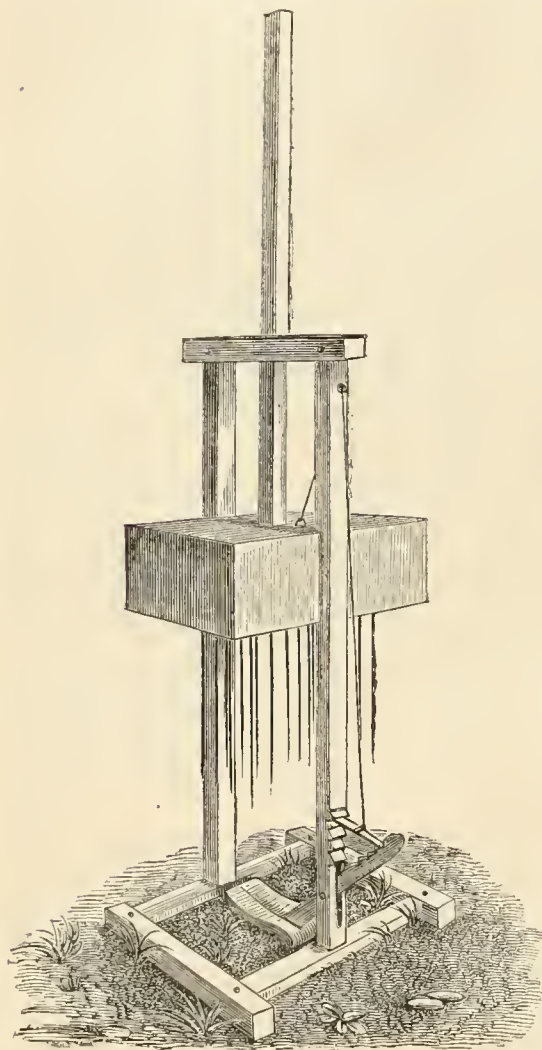
Of new plants groups are shown by Messrs. Veitch, Williams, and Bull. Messrs. Veitch take certificates for *Platyloma bellum*, *P. brachypterum*, *Oncidium fuscum*, *Masdevallia Lindenii*, *Demonorops fissus*, and *Ptychosperma Kuhlmannii*; Mr. Williams for *Colax jugosus*; Mr. Bull for the same *Orchid*, *Vriesia reticulata*, *Encephalartos regalis*, *E. ampliatus*, and *Dracena splendens*. Mr. Ware has certificates for *Iris australis* and *Primula acaulis* The Giant, double yellow; and Messrs. E. G. Henderson one for *Spiraea japonica aurea reticulata*, with neat yellow-veined foliage. Rose *Madame Lacharme* and *Azalea Apollo* from Mr. Turner had likewise certificates.

BOUQUETS OF ROSES.—On the occasion of the recent visit of Her Majesty to the International Exhibition bouquets of *Roses*, consisting chiefly of varieties raised and named after Her Majesty and the Royal Princesses by Mr. W. Paul, of

Waltham Cross, were presented to the Queen and Princesses by Mr. Paul's children (bouquets of Roses as well). The entrance to the school of cookery was decorated with Roses by Messrs. George Paul & Son, of Cheshunt.

BELGIAN MOLE TRAP.

On a visit we recently paid to the extensive nurseries of Mr. Van Houtte, at Ghent, we saw a singular-looking implement lying at the foot of a hedge, the use of which we could not divine until we were informed by Mr. Van Houtte that it was



Belgian Mole Trap.

a mole trap. Our figure, for which we are indebted to Mr. Van Houtte's courtesy, will convey a very correct representation of this curious contrivance. It consists of a block of wood armed on its under surface with long iron spikes. This block of wood is raised in a frame in which it is kept in place by a groove on each side, into which the sides of the frame are let in. A string fastened to a hook on the upper surface of the block passes through a hole in one of the sides of the frame to a piece of wood, which is set somewhat like that used in setting a figure-1 mouse trap; and the oblique notched lever in which it is set communicates with another lever, the end of which where it joins the notched lever is let into the mole's run, and when the animal passes where this is set it pushes up the lower lever, which disengaging the piece of wood in the notch the spiked block descends and immediately

kills the animal. Though this is a formidable-looking instrument it is also a humane one, and causes death more instantaneously than the other method of slow strangulation usually resorted to by the use of the wooden barrel traps.

THE NEW ROSES AT SOUTH KENSINGTON ON 2ND OF APRIL.

I CERTAINLY did say that possibly the judgment of the Committee was as much to be relied on as that of "D." and I still think so; but I do not think there was any "asperity." "D." must know that there are men on the Committee who also "live amongst Roses," as he expresses it, and grow them by tens of thousands. If there were anything in "D.'s" objection to the Committee's awards in the new Roses on the score that only some of the members are well acquainted with them, it would be impossible to escape the conclusion that the certificates of the Committee are worthless in every case. That is the logical inference from "D.'s" objection.

"D." appeals to the future to justify his opinion. I need not point out that in doing this he goes quite beside the question, which is, Were the specific Roses which "D." speaks of as respectively certificated and passed-by by the Committee deservedly so certificated and passed-by or not? "D." pits his opinion against that of the Committee, and evidently considers his own opinion as most reliable. Your readers must judge for themselves as to this.

With regard to Etienne Levet, "R. D." confirms my statement about the bloom submitted to the Committee, and even "D." admits that it was slightly defective. I go further, and I say without hesitation that such a bloom would not have counted at any exhibition in England with a judge who knew his business. I may, I suppose, without being guilty of breach of confidence, state that when this Rose was brought on the table there was only one of the Committee who thought it should be noticed, and that this gentleman afterwards admitted that he thought he had been a little too fast, and that in proposing a certificate he rather had in mind what he had seen the Rose to be last autumn than the bloom shown.

I am glad to find that Mr. Douglas has proved *Lyonnais* to be so good. I found it equally good in the open ground last autumn.

As to *Président Thiers*, I append an extract from a letter I have just received from a friend. "*Président Thiers* as it bloomed here last autumn on started buds was splendid, something in the style of *Countess of Oxford*, and as bright as fire." As it bloomed equally well with me in the open last autumn, I can confirm my friend's statement in every particular.—A MEMBER OF THE FLORAL COMMITTEE.

[We think this controversy may now close. Each is entitled to his opinion, and they may amicably agree to differ.—Eds.]

REMOVING LARGE TREES.

WITH reluctance, but from a sense of duty to myself and the public, I feel bound to reply to an article which appeared in your Journal on October 24th, 1872, on "Moving Large Trees." I had heard of it, but yesterday was the first time I had the opportunity of reading it.

We all owe a debt of gratitude to my worthy friend Mr. Pearson when he writes to the purpose on subjects with which he is familiar, but when he professes to teach your readers what he has never had any practical knowledge of, and what he certainly does not understand, I with others feel that he should have more consideration for the time of his friends. I do not charge him with any intention to mislead the public, but if they believe what he says he does, they are much misled. As the gist of my friend's hypothetical article is contained in the first paragraph, I need only deal with it. He says, "I have long thought that moving large trees is a mistake, and generally involves a waste of money. Where funds are forthcoming it is easy enough to build houses, but timber trees are things of the past as well as of the present, and ancestral Oaks cannot be bought except as felled timber. Even evergreen shrubs cannot be planted too small if the finest specimens are desired in the future. In making a new garden, were the same money expended in manuring and trenching the soil as is spent in large shrubs over and above what small ones would have cost, I believe that in five years the advantage would be obvious to anyone. Most shrubs make great progress in five years; large shrubs transplanted often take that

time to recover, and nearly as long to die; but in the case of timber trees I can hardly think anything more unlikely than that they can be moved of large size and afterwards make permanent trees." In the case of "large shrubs transplanted they often take five years to recover, and nearly as long to die," here Mr. Pearson speaks positively, and if this has been the result of his experience he may well advise his friends to stop. On the other hand, I as positively declare that for more than forty years I have transplanted large shrubs with uniform success. In the removal of large trees he only ventures his opinion. Now, in order to prove that "moving large trees is" not "a mistake," I shall only refer your readers to a few out of many practical proofs which cannot be controverted. Whilst Elvaston Castle remains undisturbed, it alone affords an unanswerable contradiction to what Mr. Pearson has written on "moving large trees." Can it be possible that he has lived within about seven miles of this place ever since he commenced business, and has been eyewitness to the undeniable success and remarkably vigorous growth which has attended the numerous large trees removed on my machines, and has forgotten all?

In May, 1852, my "British Winter Garden" was published; in that I gave some diagrams of very old trees of great size some hundreds of years of age, and some of them brought as much as twenty-five and thirty miles even in summer. They never showed signs of removal, and are now healthy and vigorous. In the above little publication I gave the progress made in twenty-one years by the first four Cedars of Lebanon which I ever transplanted as large trees, and this day I have been privileged to measure the same trees at the end of another twenty-one years, and they are as follows:—

THREE CEDARS MOVED FEBRUARY, 1831.

Height of Trees, 1831.	Circumference of Trunks, 1831.	Height of same Trees, 1852.	Circumference of Trunks, 1852.	Heights in 1873.	Circumference of Trunks, 1873.
28 feet	4 feet	46 ft.	6 feet 1 in.	54 feet	8 feet 1 in.
32 "	5 "	55 ft. 6 in.	6 feet 3 in.	67 feet	9 feet 8 in.
35 "	3 "	58 ft. 6 in.	6 feet	70 feet	9 feet 6 in.

The first of the three was planted on the south side of an

avenue running east and west, and shaded by tall Limes, their roots also impoverishing the soil. The last two had full light and fair play at the roots.

CEDAR OF LEBANON MOVED NOVEMBER, 1831.

Height in 1831.....	33 feet.	Circumference of trunk, 1831,	6 feet.
1852.....	44 feet.	"	1852, 7 feet 10 in.
" May, 1873.....	53 feet.	"	May, 1873, 10 feet 1 in.

Notwithstanding the progress made by this tree, it has not been so favourably situated. All four are now in full vigour.

A Horse Chestnut, transplanted in an avenue in 1850, at that time was over 12 tons in weight, with a circumference of stem a little over 6 feet. The same tree I measured this day (May 2nd), and found it 9 feet 8 ins. I likewise examined an "ancestral Oak," which I removed from the centre of a plantation on the 4th of July, 1855, during a broiling sun. This tree was 46 feet 7 inches high and in full leaf, and had no previous preparation. It never flagged a leaf, it has greatly increased in size, and is now in fine health. Others of different kinds have been moved in summer with equal success. But as it has been said, "anything will grow at Elvaston," I enclose a circular of testimonials from fourteen counties, and if not intruding on your space, I have marked six, each bearing particularly on different points at issue, which I should like you to give as proofs of successful planting. Mr. Pemberton, of Millichope Park, Church Stretton, Shropshire, who had two and three of my machines for three years, wrote eight years after we had finished as follows:—

"I have much pleasure in certifying as to the great success of the operations in tree-moving which were carried out at this place under your directions between the

years 1858 and 1861. During that period there were moved here on your system, without any regard to time of year, a great number of trees of all sorts and sizes, but mostly evergreens, a good many of these being Yews of large size and great age. From my experience of your system, I have no hesitation in saying that if the directions given are duly carried out in all respects, complete success may be considered a certainty."

In this testimonial I attach great importance to the concluding paragraph. Very few people understand how to remove large trees in accordance with their requirements, and if the directions given are not duly carried out in all respects, complete success cannot be expected.

"Thornhill, Cowes, Isle of Wight, June 4th, 1869.

"I have great pleasure in bearing testimony to the success which has



attended the removal of some hundreds of large trees upon your system at my place, Lillesden, in Kent, and to the perfect efficiency of your machines, and the intelligence and zeal of the men you send with them. The beauty of my place has been increased, under your aid, in a degree which, under any other plan, must have been the result of a century.—I remain, sirs, your obedient servant, EDWARD LOYD, of Lillesden, Lieut.-Col."

All here mentioned was accomplished in one year, and, according to Mr. Pearson's notion of things, it would take five years. Then let anyone of taste and judgment compare the two results, and I feel sure, as my friend puts it, "the advantage would be obvious to anyone."—WILLIAM BARRON.

[With the preceding communication came a woodcut of a tree on the transplanting machine employed by Mr. Barron, who is the head of the firm at the Elvaston Nurseries, Borrowash, near Derby. This woodcut we here reproduce, and in relation to it Mr. Barron observes:—"This is not a fancy picture, but is taken from a photograph which I enclose. This photograph was taken of one of our machines as exhibited in the show-yard of the Royal Agricultural Society at Leicester, in July, 1868. The tree is a Scotch Fir. It was lifted by the machine on the Friday before the Show week, and removed on a rough and hilly road over eight miles on the Saturday; it stood on the machine the whole of the show week, and on the following Monday it was taken five miles out of Leicester and planted. Hence it was ten days on the machine in the middle of summer under a cloudless sky and a broiling sun the whole of the time. The tree never went back, and is now growing well. It was, when removed, 41 feet high."]

THE EXCRETION OF OXYGEN FROM ROOTLETS.

It was the opinion of Professor Lindley that gas did not exude from the rootlets of plants, but there is no doubt about this, at any rate from aquatic plants; and in his "Theory of Horticulture" we find it stated that gas, in union with sap, was observed to escape rapidly from the cut end of the root of a Birch tree. I could never see any reason why oxygen should not exude from the rootlets. It would be a clever mode of conveying it to the soil where, independent of atmospheric air brought down in solution with water, or any other mode, it would act on carbonaceous matter, converting it into carbonic acid, and on inorganic matter, rendering it soluble, and capable of being absorbed by the same rootlets from which the oxygen exuded. This seems feasible. Oxygen can be observed to escape from the rootlets of aquatic plants, and can be collected and burnt. Take a glass receptacle and place it in water of 100° temperature, and in it some of the Anacharis weed; breathe into the water through a tube for five minutes, place the whole in the sun, in a few minutes you can perceive by means of a powerful lens very small bubbles escaping from the rootlets; these do not rise to the surface, but enter into solution with the water. In order to see the gas escaping with the naked eye you must cut the stem of the Anacharis across, when bubbles will be seen to rise rapidly to the surface, which, if the experiment be carried out on a large scale, can be collected in the usual way, and a red hot wire inserted in the gas ignites. The reason why I heat the water is to excite the plant to decompose more rapidly the carbonic acid breathed into it from the lungs.—OBSERVER.

THE VIENNA EXHIBITION.

BESIDES, and almost beyond the Exhibition building, the flower show was the point of attraction. Quite on the southern outskirts of the grounds, behind the Japanese buildings and garden, the grounds have been laid out with shrubs and flower beds, which, however, are not yet filled, as a foreground to a semi-circular combination of wood and striped canvas, consisting of a central and two side pavilions, connected by a semi-circular passage. This is intended to accommodate a permanent flower show. The arrangement cannot be called a happy one, although in outward aspect it is very pretty. First of all, it is very questionable whether some more solid construction would not have answered much better. Everyone knows the miseries of such canvas structures in wet weather, and although on Sunday this one stood the test better than your tents in the Horticultural Gardens, umbrellas were not a superfluity. But the chief drawback in this first flower show has been that the canvas building did not afford sufficient shelter against the cold night. The whole show has suffered from it, most of the flowers looking shrivelled and sickly. The semi-circular slope, too, is scarcely favourable for such a show, because you can get no effective view of the whole from any

point. In the passage there is only just room for the stands. Only in the pavilion is grouping possible, and here two foreigners and one Viennese make the most effective display—Linden, from Belgium, in the westerly pavilion; Abel, from Vienna, in one corner of the middle pavilion; and Seidel, from Dresden, in the easterly pavilion. Azaleas predominate in each of them, some of them fine specimens, no doubt, which could hold their own in any flower show, but nothing that would strike as a novelty in colour or variety.

While these three have arranged more general displays, others have taken to specialities. Thus the Botanical Gardens and the Garden Society exhibit large plants—Palms and Conifers. Rodeck from Vienna shows fine Rhododendrons and Begonias. The gardener of the Duke of Brunswick sends choice plants from the conservatories at Heitzing—stock Fuchsias, Dracænas, and Gloxinias; Matzaetter, a collection of Calceolarias; Klaring, a selection of Pinks. The most interesting among these special shows is that sent by Mr. Flatz, who has collected four hundred Alpine plants, and exhibits them on a table, a most interesting microcosm of the Alpine Flora.

Besides the flowers there is a show of fruit and vegetables. Of course, the former shows mostly the produce of last year in Apples and Pears; one man, Runkel, of Kremsmünster, a town which has a name for fruit, exhibiting ninety varieties of Apples and twenty-five of Pears. Of forced fruit there is scarcely a trace, for the few Strawberry plants scarcely deserve mention.

In vegetables the display would scarcely excite much astonishment either in Covent Garden or at the Marché des Innocents.—(Times.)

Owing to the limited space placed at the disposal of the British Commission, exhibitors have had a great difficulty to provide a suitable and effective display. Messrs. Carter have adopted a very ingenious style. At a cost of between £600 and £700 they exhibit a very handsome show-case containing nearly eight hundred distinct samples of agricultural, vegetable, and flower seeds, most of which have been grown on their own seed farms in England. They also exhibit some models in *papier maché* of their prize roots, including Mammoth Long Red Mangel, Warden Orange Globe Mangel, Imperial Hardy Swede, Robinson's Champion Drumhead Cabbage, &c., all of which are faithful representations in size, colour, and form. Messrs. Carter & Co. have also supplied a large quantity of their lawn grass seeds for forming the turf surrounding the chalet of H.L.M. the Crown Prince of Prussia, and other portions of the Exhibition grounds.

IS A "REGULAR" AND A "PROFESSED" GARDENER THE SAME?

Will you or any of your readers define what a "regular" gardener is? Some of the horticultural societies divide their schedules into two classes—First, gentlemen and their gardeners; second, gentlemen not keeping a regular gardener. I always construed the words to mean a gardener in constant employment as opposed to a jobbing gardener; but at one of our western shows a friend of mine, who keeps more men than myself, showed in both classes, and on inquiring I found he construed the words to mean "a professed gardener," and to avoid mistake he got the schedule altered the next year; the word "professed" takes the place of "regular" gardener. As I do not keep a "professed" gardener, but only men that were employed previously on farms, and now look after my farm also, I showed in the same class at the Sherborne Show, and after winning the first prize in both classes for Roses was disqualified for the latter (on an objection made by the man who came next to me) on the ground that I kept a regular gardener. The Grantham Horticultural Society has just issued its schedule, dividing the entries into the same classes, and as I think of showing there and elsewhere, where the same division is made, I should like some one of authority to decide what a regular and what a professed gardener means.—JOHN B. M. CAMM.

[We know of no distinction between a "regular" and a "professed" gardener. The only object in awarding separate prizes to those who do not keep a gardener and those who do keep one, is that the former may not be opposed by those who have more skilled assistance. Any gentleman who constantly employs a man in cultivating his garden ought not to exhibit

in the same class with gentlemen who only have occasional help. It may be true that the man constantly employed is not a skilful gardener, but it would open the door to difficulties and unfairness to attempt to define the amount of skill permissible.—Eds.]

IBERIS GIBALTARICA.

I LATELY saw in a collection of herbaceous plants, one named *Iberis gibraltarica vera*. I know there are several different plants in cultivation under this name, and this which professed to be *vera* produced white flowers. On reference to the "Botanical Magazine," t. 124, I find the plant there figured with flesh-coloured flowers, and with the following description:—

"This plant is easily raised from cuttings, and easily preserved; it may be kept through the winter in a common hot-bed frame, and in mild winters will stand abroad, especially if sheltered amongst rockwork. Its greatest enemy is moisture in the winter season; this often proves fatal to it, as indeed a long-continued damp atmosphere does to many others. The nurserymen about London complain of losing more plants the last mild winter, from this cause than they generally do from severe frosts. In a little greenhouse which I had in my late garden, Lambeth Marsh, most of the plants became absolutely mouldy; in such seasons then, though in point of cold the plants may not require it, we must dissipate the superfluous moisture by a gentle heat."

Can this be the same plant as grows so freely now in open borders and produces white flowers? I shall be glad if some of your correspondents will give their views on the subject.—R. A.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

PHAJUS BLUMEI var. *BERNAYSII*. *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Native of Queensland. "P. Blumei, var. Bernaysii, whether a species or variety, differs from all others in the sulphur-coloured inner surface of the petals, sepals, and lip; its tendency to a triandrous column, which it shares with P. Blumei, is rather an abnormal condition of that organ than a specific character. The spur is shorter than in the figure of grandifolius. P. veratrifolius, Lindl., of Silhet, is stated to be yellow-flowered, and Blume describes a P. flavus from Java, so the colour is not peculiar to P. Bernaysii.

"This beautiful plant was communicated from the stoves of Messrs. Veitch, with whom it flowered early in the present year. It was named Bernaysii by Dr. Rowland, in compliment to A. Bernays, Esq., one of the most active promoters of the Acclimatisation Society of its native country, Queensland, and a valued correspondent of Kew."—(*Bot. Mag.*, t. 6032.)

XIPHION HISTRIE. *Nat. ord.*, Iridaceæ. *Linn.*, Triandria Monogynia.—Native of Mount Lebanon. Flowers purple, variously spotted and blotched with darker purple. "Mr. Berberey states that it is the Iris Libani of his late lamented friend M. Reuter's manuscripts, and was sent about ten years ago to M. Boissier by M. Gaillardot, who found it on Mount Lebanon and on Mount Gerizim, in Palestine; as also that its nearest ally is X. reticulatum, M. Bieb., from which it differs not only in structural characters but in its paler colour, in flowering fully six weeks earlier, and in being inodorous. A comparison with X. reticulatum shows that this is further abundantly different, in its much smaller size, copious finely-reticulated sheaths of the corm, much fewer shorter broader stout leaves often not exceeding the scape, broader spathes, and differently-shaped inner perianth-segments, which are notched at the tip. It is a very beautiful plant, but whether hardy in this country remains to be proved. As a pot plant it cannot fail to be highly prized."—(*Ibid.*, t. 6033.)

ACRANTHUS ARACHNITIS. *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Native of Madagascar. Flowers yellowish green. More curious than handsome.—(*Ibid.*, t. 6034.)

HYPOXIS LONGIFOLIA. *Nat. ord.*, Hypoxidaceæ. *Linn.*, Hexandria Monogynia.—Native of Algoa Bay. Flowers yellow. "A very distinct species of Hypoxis, brought by Mr. Cooper from Algoa Bay when collecting for W. Wilson Saunders, Esq., remarkable for the great length of its narrow, flaccid, grass-like leaves. Our plant flowered in the Royal Gardens, August, 1871."—(*Ibid.*, t. 6035.)

CROCUS SIEBERI. *Nat. ord.*, Iridaceæ. *Linn.*, Triandria Monogynia.—Flowers some purple and some white. "A common Greek plant, and, in fact, the commonest Crocus of that country, found at an elevation between 1000 and 7000 feet,

according to Professor Orphanides; also occurring in Bosnia, Crete, and Herzegovina, flowering frequently near the melting snow. It is a very early blooming species, and Dr. Hoeker received flowering specimens from Giles Mumby, Esq., Messrs. Ware of Tottenham, and the Royal Gardens, all about the middle of January and beginning of April. The very closely allied C. veluchensis of Herbert, which inhabits the Morea and Transylvania, differs chiefly in wanting the orange colour on the throat."—(*Ibid.*, t. 6036.)

PRIMROSE—Violet Gem.—"The new hardy Primrose called Violet Gem was exhibited by Mr. R. Dean at the meeting of the Floral Committee on March 5th, and then received a first-class certificate. Violet Gem is remarkable for the dense rich violet hue of its flowers, and its charming bouquet-like habit of throwing its blooms up in a rounded bunch, which is well protected by the foliage; still it is a pin-eyed flower, but the pistil is so far down the throat of the tube as to be quite out of sight. In other seedlings both the thrum-eye and excellent form are found combined with pure white, sulphur, lilac, rose, rosy red, magenta, purple, crimson, and various intervening shades of colour, all of them true Primroses, and as early to flower as are the commonest kinds found in our hedgerows.

"These new forms of the Primrose are not only perfectly hardy, but under proper cultivation can be easily propagated. The greatest danger to the Primrose arises from drought at the roots during the heat of summer; but if the soil in which they grew be moist, then they bear solar heat with considerable impunity. In the case of scarce kinds it would be wise to grow them in pots for a year or two, keeping them in a cool frame in the winter, or in the greenhouse when in bloom, and then having them plunged in ashes under a north wall in the summer, and kept well watered.

"In autumn, about the end of September, the plants should be carefully divided, and be either re-potted or planted out into beds, and they will get well rooted and throw up good heads of bloom early in the spring. In any after-cultivation care should be always taken to keep the plants growing all the summer, as that is the great secret of successful Primrose culture. When the foliage is burnt up by heat the old crowns become stunted, the young ones cease to grow, and the plants rapidly become smaller. Therefore, where possible, in hot weather give a little shade, but never allow the plants to suffer from the want of water."—(*Florist and Pomologist*, 3 s., vi., 97.)

LATE GRAPES.

I HAVE always liked Mrs. Pince's Black Muscat, and as your readers know have contended that it was a really good Grape. It has always done well with me, and has kept better than Lady Downe's every year since it first fruited here. I have to-day eaten part of a bunch grown by that veteran Grape grower, Mr. Hill, of Keele Hall, who says he considers it the best of all late Grapes. I can only say I never eat any so good at this time of the year in my life. When a new variety of fruit fails with any of us it would be well to think twice before condemning it, I am convinced many a good thing is thrown away because the treatment it requires is not understood. I destroyed Golden Champion in a pet, and afterwards saw it so good at Moat Bank, with Mr. A. Bass, that I felt vexed at my precipitancy, and if it were not that I think the Duke of Buccleuch an improvement on it in every respect, should be inclined to try it again. I thought so much of the Duke at Mr. Thomson's that I bought fifty plants of it.—J. R. PEARSON, *Chilwell*.

TEACHERS OF CULTURE—LIEBIG.—No. 1.

By CUTHBERT W. JOHNSON, F.R.S.

WHEN, on the evening of April 20th, amid the tears of his fellow citizens, with his coffin deeply covered with wreaths of flowers, the grave closed over the Baron Justus Von Liebig, the agriculturist—nay, all classes of men, lest one of their ablest and most laborious friends—a true philosopher, who only laboured for the elucidation of truth. His researches in organic chemistry will be long recorded as indeed invaluable to the cultivator. Let us only remember one of his great and enduring services to the farmer—viz., the introduction of superphosphate of lime. It is true that he did not discover that salt. Phosphate of lime, the basis of bones, was discovered by Scheele, a celebrated Swedish chemist, in the year 1774; and it was not until the year 1795 that two eminent French chemists, Fourcroy and Vauquelin, by adding sulphuric acid to bones, produced the salt to which they gave the name

of superphosphate of lime. It was long, however, after the phosphate of lime in bones had been used by the Lincolnshire farmers as a manure for Turnips, and by the Cheshire graziers as a dressing for their pastures, that anyone ascertained the value of the superphosphate. In 1839, however, the discovery was made, and the discoverer was Liebig. It was in his valuable work on "Organic Chemistry," translated by Dr. Lyon Playfair, that at page 184 he remarked—"To manure an acre of land with 40 lbs. of bone dust, is sufficient to supply three crops of Wheat, Clover, Potatoes, Turnips, &c., with phosphates. But the form in which they are restored to the soil does not appear to be a matter of indifference; for the more finely the bones are reduced to powder, and the more intimately they are mixed with the soil, the more easily are they assimilated. The most easy and practical mode of effecting their division is to pour over the bones in a state of fine powder, half of their weight of sulphuric acid diluted with three or four parts of water, and after they have been digested for some time, to add one hundred parts of water, and sprinkle this mixture over the field before the plough. In a few seconds the free acids unite with the bases contained in the earth, and a neutral salt is formed in a very fine state of division. Experiments instituted on a soil formed from grauwacke, for the purpose of ascertaining the action of manure thus prepared, have distinctly shown that neither Corn nor kitchen-garden plants suffer injurious effects in consequence, but that on the contrary they thrive with much more vigour." Here, then, are the first recorded trials of superphosphate of lime as a fertiliser. It is true that after the appearance of Liebig's work patents were taken out, and manufactories established, for the preparation of the superphosphate, but from Liebig the idea originally came. And he moreover suggested the substitution of muriatic acid for the sulphuric in its preparation, assigning as a reason that the muriatic acid formed with the lime of the bones a very deliquescent salt, known to chemists as the muriate of lime, which by absorbing from the atmosphere its moisture would be beneficial on dry soils.

The labours of Liebig were long devoted to the investigation of the food of plants, and, what is nearly the same thing, the manures by which their growth is promoted. It is true that this involved him in controversies with other chemists who differed from him in some of his conclusions; but these differences never induced Liebig to swerve from his course; controversy had no charms for him. It was a quarter of a century after his discovery of the use of superphosphate of lime that he observed (Journal of the Royal Agricultural Society, vol. xxv., p. 507) "There is something degrading from a scientific point of view at the bottom of this controversy, but there is nothing humiliating to me, although much that is highly annoying, for I am not so proud as to think myself humbled when I am fulfilling the vocation to which I have devoted my life—that is of instructing others." He seemed to speak with great foresight, when thus writing in 1861, he added, "every doubt must disappear by the creation and progress in all European countries of an immense branch of industry—the fabrication of artificial manures from inorganic or mineral substances, which are now extensively employed."

It was not only to the introduction of artificial manures that the great German chemist directed his attention, his researches extended to "The Chemistry of Food," in which in a work published in 1847, and translated by Dr. W. Gregory, he gave the result of his valuable researches, not only upon the chemical composition of organic matters, but upon their cooking

and upon the chemistry of digestion. Here again his anxiety to serve his fellow creatures displays itself. In his preface he observed: "As my experiments include the changes which flesh undergoes in its preparation for food, I trust that not only men of science, but also the lovers of a rational system of diet, will find in the following pages many observations worthy of their attention."

His researches on the chemistry of food led to his initiating the preparation of the essence of meat in a manufactory over which he presided till his death. But it would be idle to attempt to follow him through all his laborious experiments; the reader will remember his inquiries upon the best modes of utilising sewage for agricultural purposes, and other great questions, the mere enumeration of which would fill one of our columns.

In all his valuable investigations Liebig had one great object, the guiding beacon of the true philosopher, the elucidation of truth—and he was ever ready to award the meed of praise to those who had preceded him in his important labours. In his preface to his "Organic Chemistry," he said: "Since the time of the immortal author of the 'Agricultural Chemistry'

no chemist has occupied himself in studying the application of chemical principles to the growth of vegetables and to organic processes. I have endeavoured to follow the path marked out by Sir Humphry Davy, who based his conclusions only on that which were capable of inquiry and proof. This is the path of true philosophical inquiry, which promises to lead us to truth, the proper object of our research." And then he adds, when expressing his obligation to Dr. Lyon Playfair, the now member for the Universities of Edinburgh and St. Andrews: "I cannot suppress the wish that he may succeed in being as useful by his profound and well-grounded knowledge of chemistry as his talents promise."

In concluding this brief notice, the reader will feel with us, that when the citizens of Munich, high and low, rich and poor, headed by the representative of the King of Bavaria, attended to his grave one of the greatest of chemical philosophers, they were paying the last sad tribute of admiration to him, who belonged not only to Bavaria—not only to Germany, but to the whole civilised world.—(Mark Lane Express.)



JUSTUS VON LIEBIG.

THE GERMINATION OF PRIMULA JAPONICA SEED.

SOME correspondents assert that it will germinate the same time as other Primulas, but this is contrary to my experience.

I gathered here some seed perfectly ripe in July, 1872, sowed it on the 27th of the same month, and placed it in the late vinery, thinking it would be up in a month. However, I was disappointed. I let it remain in the same place until January, 1873; I then put it into a temperature of 65° to 70°.

About the middle of March a few seedlings made their appearance. As they were not very crowded I let them remain. About a month after the remainder of the seedlings came up as thickly as possible, so that the seed took over eight months to germinate. I would advise others that have sown it not to despair under a twelvemonth.—J. W. SEDOLEY, *The Cedars, Leamington.*

ODONTOGLOSSUM VEXILLARIUM.

WE this week have the pleasure of producing a correct representation of this superb new Orchid which created such a sensation when exhibited by Messrs. Veitch, of Chelsea, at

the Royal Botanic Society's Spring Show on April 23rd, and still greater enthusiasm at the Royal Horticultural Society's Show last week. On the former occasion the plant had but two flowers, on the latter it had four borne on two spikes, and measuring $3\frac{1}{2}$ inches long by $2\frac{3}{8}$ in breadth; and undoubtedly such skilful cultivators as Messrs. Veitch will yet astonish the world horticultural, as the plant grows stronger, with an as yet undreamt-of development of its beauties. The colour is a beautiful soft lilac rose, with the base of the lip white and yellow. Poor David Bowman who went out a few years ago as a

with the same treatment as *Odontoglossum Phalenopsis* and *O. citrosum*.

NOTES AND GLEANINGS.

THE following are the subjects selected for the FLORAL COMMITTEE'S TRIAL COLLECTIONS in the Royal Horticultural Society's Garden at Chiswick during the present year—viz., Novelties amongst bedding *Pelargoniums*; salmon and other light-coloured Zonal *Pelargoniums* to be grown under glass;



Odontoglossum vexillarium.

botanical collector to South America, and, like so many others who have trodden the same path, perished in enriching our gardens, was the first to discover it on the Andes of New Grenada. Subsequently Wallis and Roezl sent home plants, but they all died either before or shortly after arrival, and it was left, we believe, to a Mr. Chesterton to have the honour of introducing last year the specimens which are now flourishing at Messrs. Veitch's. This *Odontoglossum*, even in its present state, is magnificent, and yet nearly all Orchids on their first introduction give but a feeble idea of what they ultimately become. What, then, will this be? What it is already we know; its blossoms are surpassingly lovely in colour and enormous in size, whilst the plant is of free growth, succeeding

Fuchsias, in continuation of last season's trial; bedding Pansies; and hybrid flowering Begonias. Contributions towards making up these collections should be addressed to Mr. Barron, Superintendent, Royal Horticultural Society's Garden, Chiswick.

— As an evidence of the great interest taken in horticulture by their Majesties the KING AND QUEEN OF THE BELGIANS, we may state that since their arrival in England they have twice honoured the establishments of the Messrs. VEITCH AND SONS with their presence. The first visit was to the Chelsea Nursery, where, having much admired the various attractions of this establishment, their Majesties expressed a wish to see the hardy trees and shrubs at the out-door nurseries at Coombe

Wood, Kingston Hill. On both occasions their Majesties were pleased to convey to Mr. Veitch the sense of their appreciation of the high cultivation displayed in their nurseries. We may add that their Majesties also visited the ROYAL HORTICULTURAL SOCIETY'S ROSE SHOW last week, as well as Mr. WILLIAM PAUL'S EXHIBITION OF ROSES, &c.

— Wood is seven to twenty times stronger lengthwise than transversely.

— On the 6th inst. the Central Chamber of Agriculture held a sitting at the Salisbury Hotel, Salisbury Square, Fleet Street; Sir Michael H. Beach, M.P., presided. On the motion of Mr. Hodsole, seconded by Mr. Hicks, the meeting agreed to the following resolution:—"That the present state of the law with respect to the CHARGEABILITY OF MARKET GARDENS TO TITHE is unsatisfactory and requires amendment, with a view to such a settlement of the question as, while just to the tithe-owner, shall not act to the discouragement of the agriculturist."

— EVERLASTING FLOWERS.—The *Immortelle* of the East (*Helichrysum orientale*), a native of Asia, has been known in Europe since 1629, but was only first cultivated in gardens about 1815. Its flowers, the symbols of friendship, or tribute to talent and genius, serve to make the garlands of *immortelles* which ornament the tombs of the dead in Roman Catholic countries. It is cultivated in France, in the communes of Lower Provence, where the soil slopes towards the Mediterranean. It succeeds very well on the slopes of Bandols and Ciota, which are exposed to the south and enclosed by walls of stone. It blossoms about the month of June. It suffers from heavy and continuous rains and strong dews, and only vegetates well on light, stony, and permeable soils. It is propagated by offsets, which are separated from the old stocks. The gathering of the flowers is made in the first days of June, before the bursting of the buds. As the flowers which are insufficiently formed or too full blown are rejected by the trade, it is important not to cut either too soon or too late. The collection is made by women, who tie them in small bundles, which are ordinarily dried on the walls of the enclosure. Finally, young girls are employed to remove the down which covers the ramifications. A kilogramme (nearly 2½ lbs.) of these plants contains about four hundred stems, each containing about twenty flowers. Each growing tuft of *immortelles* produces sixty or seventy stems. A hectare (two acres and a half) will contain 40,000 tufts, producing annually 2,400,000 to 2,800,000 stems, yielding 16,000 to 20,000 bundles, or 5½ to 6½ tons in weight.—(*English Mechanic*.)

— MELTED snow produces about one-eighth of its bulk of water.

— At a depth of 45 feet, the temperature of the earth is uniform throughout the year.

— A GENTLEMAN, says the (*American*) *Western Ruralist*, anxious to ascertain the effect of TRANSPLANTING at night instead of by day, made an experiment with the following results:—He transplanted ten Cherry trees while in bloom, commencing at four o'clock in the afternoon, planting one each hour until one o'clock in the morning. Those transplanted during the daylight shed their blossoms, producing little or no fruit, while those planted in the dark maintained their condition fully. He did the same with ten dwarf trees, after the fruit was one-third grown. Those transplanted during the day shed their fruit; those transplanted during the night perfected their crop, and showed no injury from having been removed. With each of these trees he removed some earth with the roots. The incident is fully vouched for; and if a few more similar experiments produce a like result, it will be a strong argument to horticulturists, &c., to do such work at night.

— YESTERDAY, 12th inst., at Lowestoft, the 100th birthday of LADY SMITH, widow of Sir James Edward Smith, once President of the Linnean Society, was celebrated by a dinner to one hundred of the oldest people of both sexes.—(*Times*.)

SEEDS RETAINING VITALITY.

In the Journal for March 6th, page 210, I find a list of seeds furnished, stating the greatest age at which they germinate freely. To my own knowledge I can vouch for Parsnips germinating freely the second year, The Student seed gave an abundant crop. Peas, Beans, and Kidney Beans all do well the second year. I keep all my seeds in boxes made of tin. I think the reason of seeds not germinating is from the place

where they are kept. A warm and dry place is the best for their preservation.—S. A. BRENNAN, *Pomeroy*.

THE BEDDING-OUT SEASON.

THE bedding-out season is again with us, and according to the manner—efficient or otherwise—in which we form our plans and mix the many varieties of plants together so as to form a very harmony of contrasts in the distinctive colours of the blooms, and the disposition of the many kinds of ornamental-foliaged plants, the future success or otherwise of the whole summer's display depends.

Nor should any be too hasty in their efforts to bed-out at as early a period as possible, there being no assured certainty that immunity from frosts that may injure will be ours until after the 20th inst. Indeed, apart from the destruction of the plants, the thermometer may fall so low as to materially injure, as will be evidenced by the subsequent very slow progress of the plants. I say, therefore, do not begin planting-out in exposed situations before the above date. Even then commence with hardy subjects alone, such as *Calceolarias*, *Ageratums*, *Alyssums*, &c., leaving always such subjects as *Coleus*, *Tricolor Zonal Pelargoniums*, and the like until last, or about a week later, which will land you very nearly in assured safety—viz., June 1st.

I have drawn attention to this subject thus prominently, owing to the knowledge I have that it is almost invariably the wish of growers to be as early as possible, and that the very anxiety so displayed put into practice, as it frequently is, previous to a cold period, really throws them weeks behind what they would have been had they been less hasty.

Those who afford themselves the treat of having their beds filled with early spring flowers will have less excuse to "bed-out" early this season, owing to its lateness, as even at this period beds of *Forget-me-not*, *Silenes*, *Wallflowers*, *Pansies*, &c., are masses of lovely bloom, and cannot be uprooted just yet. Do not, however, in the meantime permit the summer occupants to suffer in their pots. Keep them well watered, and give an occasional soaking with manure water besides, to support them against being permanently checked, which greatly destroys the early bloom prospects where permitted.

As regards the annual preparation of the beds, for these their summer occupants to make a really efficient display scarcely any two beds should be prepared alike, excepting in so far as plants of given or kindred sorts are concerned. For instance, *Calceolarias*, owing to the manner in which they suddenly die off during summer, should have their beds prepared by digging and manuring to a depth, where possible, of 3 feet, more or less. Strong-growing kinds, such as *Ageratums*, *Petunias*, and the stronger types of *Zonal* and other *Pelargoniums*, though they need not have this deep soil-preparation, should not, besides, have manure too abundantly worked-in on digging them, and then only the milder kinds, such as leaf mould, &c., should be used.

Let us now turn our attention to the more immediate arrangement of colours. The remarks I make must, I scarcely need add, be qualified with the statement that, as individual tastes vary greatly, I but give the results of my own previous opportunities of judging of the best effects to be produced, and state what some of the happier contrasts are formed of. Though I am a great advocate for quiet or neutral colours, I nevertheless refer first to "telling" contrasts afforded by a few of the more showy or warmer colours. Scarlet *Geraniums*, or *Pelargoniums*, whether *Zonal* or otherwise, though they should never be allowed to predominate in any garden or tastefully arranged parterre, hold first rank. With these must be associated the warmer tints of yellow, *Coleus Verschaffelti*, *Lobelia*s, variegated and *Tricolor Zonal Pelargoniums*, *Iresine Lindenii*, *Amaranthus melancholicus ruber*, *Golden Feather Pyrethrum*, and intermediate tints of *Pelargoniums*, varying as they do to a very great degree at this period. *Ianthé*, *Waltham Seedling*, *Lord Palmerston*, *Indian Yellow*, *Orange Nosegay*, *Duchess*, *Lady Kirkland*, *Blue Bell*, and *Hogarh* are good kinds. Each and all such bedding plants as enumerated may be planted in properly balanced contrasts to form either showy beds or ribbon borders, &c.

Turn we now to a few quiet pleasing contrasts, amongst more neutral tints, consisting of such as *Cerastium*, *Lobelia*, blue and white, *Pyrethrum Golden Feather*, variegated *Pelargoniums*, and such as have white flowers (especially *Pelargoniums* of the pink or *Christine* sections), amongst which *Beaton's Silver Nosegay* is especially good, all being extremely effective

and pleasing. Indeed, can more pleasing contrasts be found than is seen in white, Christine or pink, yellow (as in Pyrethrum), and the purple of Purple King Verbena? Always allow the pink or cerise of the Christine tint and a good white to slightly predominate over their before-named associations. Thus, whether as exhibited in beds or ribbons, the most fastidious will approve.

Finally, with the aid of *Amaranthus salicifolius*, *Zea variegata* (Variegated Maize), *Cannas* (Ludian Shot), in variety, and the many kinds of ornamental-foliaged plants—which should be planted in more central positions or with well-selected surroundings, so as to afford a contrast of most pleasing green in multiplicity of graceful forms with the more gaudy flowers around—a tone and a contour will be attained in close copy of Nature's inimitable displays, but with the handiwork of the able culturist stamped in indelible features thereon.—WILLIAM EARLEY, *Valentines, Esser.*

WHITE CLIPPER PELARGONIUM.

PERMIT me to correct a little clerical error that occurs in your Journal of to-day (May 8th), relative to an award of the Floral Committee of the Royal Horticultural Society to the *Pelargonium White Clipper*.

It is therein stated—first, "that *White Clipper* came from Mr. Must," and subsequently "that it was exhibited by Dr. Deuny, for Mr. Must." Neither of these statements is quite correct. On the occasion to which the notice alludes I entered for the Floral Committee's opinion two *Pelargoniums* of very considerable merit—viz., *Mrs. George Smith* and *White Clipper*; the former had many months previously been kindly presented to me by the raiser, the latter I purchased in the ordinary way of business of Mr. Must, in the first week of March. The misconceptions to which I allude doubtless arose from the fact of the award given to *White Clipper*, being (at my request) placed in the name of the raiser, while the exhibit stood in mine. I adopted this unusual course of procedure from a desire that credit should be given to whom credit was due, considering it to be incompatible with that generosity of spirit which I trust invariably accompanies the love for horticulture, to permit one's name to usurp the place that by right belongs to another.—JOHN DENNY, *Stoke Newington.*

AMARANTHUS SALICIFOLIUS.

THE FOUNTAIN PLANT.

DESPITE the adverse circumstances which may have produced its failure in some localities, the general testimony seems to be in its favour, and the *Amaranthus salicifolius* is a success. It appears to have met with more success in northern latitudes than in southern ones. We notice that the most enthusiastic commendations come from gardens located along the Hudson river, or in Vermont and Massachusetts—uniformly wherever the soil has been sandy. On the grounds of Hon. Horace Fairbanks, near St. Johnsbury, Vt., there was raised last year by Alfred Parker, his gardener, a plant which was 7½ feet in height, and 10 feet around the branches, with a stem 6 inches in circumference. (So says the *Vermont Farmer*.) The seeds were sown in a pot in the greenhouse in March, came up well, and grew slowly for awhile. Mr. Parker then potted them separately, and they soon began to grow with surprising rapidity. Some of them were kept under glass all summer, others upon the verandah, and others still in the open ground, and they have done equally well in every place. No one can see these fine plants without being struck with their graceful habit of growth, their long, pendulous, and beautifully waved and crinkled foliage, as well as the striking and finely-variegated colours of the whole plant. The stems are a dark red with a fine polish, the leaves at the tips of the main stem and branches form plumes of mixed crimson, yellow, and green, very clear and vivid in colouring always, but varying in shade and tint with the degree of exposure to direct sunlight. The older leaves are mottled red and green, growing darker and somewhat duller with age, but never shabby or unpleasant in hue. So far is this plant from requiring a cool atmosphere and shelter from the sun, that Mr. Parker's plants did not begin to grow rapidly until warm weather began, and those that have had the most sun have grown the best and exhibited their desirable characteristics the most satisfactorily. Altogether we pronounce the "Fountain Plant" a decided success, and a valuable addition to our list of ornamental

plants for either in-door or out-door decoration.—(*The Horticulturist.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHEN Peas and such-like crops have been sown between ridges, let them now be levelled down; it will give a neat and fresh appearance. Thin-out seedling crops where the plants are small, and if it should be necessary to stand in amongst them, let the soil be afterwards loosened-up where it is trodden down. Thin the plants of *Beet* to a foot apart while they are small, fill-up the vacancies with those plants that are drawn out, they will produce plants equally good with the others. If the first crop has altogether failed, it is not yet too late to sow another. Make another sowing of both early and late sorts of *Broccoli*, the former to come in in October, the latter late in the spring. Earth-up those *Cabbages* that were planted early in the spring; tie-up the leaves of a few of the forwardest of the autumn-planted in order to form hearts for early use. Plant *Capsicums* out on a warm rich border, water them during dry weather throughout the season. *Chervil* and *American Cress*, make another sowing of each. Continue to prick out seedling plants of *Celery*. In planting-out a second time before finally transplanting into trenches make a bed of equal parts of rotten dung and loam, about 4 inches thick, on a piece of hard ground, so that at the time of planting the whole of the earth may adhere to the roots after the spade is passed between each of the plants. Particular attention is required to keep the *Cucumber* plants in a bearing state. Stopping the shoots is the most important part to be attended to; the plants should be looked over every fine morning about an hour after the frames have been uncovered and the plants have had a little air. Sow a little *Endive* seed for an early crop. Plant out *Dwarf Kidney Beans* that were sown in pots or boxes, in rows 2½ feet apart on a warm border. Another sowing should also be made. Make a sowing of *Leeks* to plant out for winter use. Plant out a few *Lettuces* about once a-week, thin the plants in their early seed-bed to a foot apart, and if any were sown on the *Asparagus* beds they will require the same attention. Woodlice are generally exceedingly troublesome about the *Mushroom* beds at this season. The best traps to catch them are boiled Potatoes put into a flower-pot and covered with a small piece of moss, the pot then to be placed on its side, and by examining it every morning and destroying all the live stock by emptying them into some hot water, they may in a short time be considerably lessened in numbers. The weather is now favourable for planting-out some of the autumn-sown *Onions*, avoid covering any portion of the bulbs. Earth-up the early crops of *Potatoes*, and those which have just made their appearance above ground will be greatly benefited by a hoeing between the rows.

FRUIT GARDEN.

Proceed with disbudding and removing young shoots from Peaches and Apricots. Where the fruit of the former is too thick a number may be cut off, those of the latter will be useful for tarts. In disbudding use a small sharp knife, as pinching the shoots off is apt to cause the wound to gum and canker. Where wood is wanted pinch off the tops of strong shoots, as several good bearing shoots may be thus obtained. Where a shoot will be too strong and only one is wanted, cut back so as to secure a good lateral. If strong shoots appear where they are not wanted, or the tree is over-luxuriant, allow a number of them to run their full length, taking off the leaves from the under parts of the shoots as they advance. They will thus form channels for the extra sap, and will not shade unnecessarily the wood you intend for bearing. In removing shoots at this season, thin them gradually so as ultimately leave no more than can be exposed to the sun and air. Many will now be busy with their snuff and nux-vomica dusters, for banishing if not exterminating the green fly.

FLOWER GARDEN.

See that all Rose trees have due attention to disbudding, stopping, &c. Watch the buds inserted last August, rub off those on the stock in a progressive way, and let all Roses, whether standards or dwarfs, intended for forcing next winter be well top-dressed with good rotten manure, fairly covering the pots. As *Crocuses* and other bulbs will now be nearly over, patches of biennials which have stood the winter may be placed close beside them; when the annuals are decayed, the bulbs, if necessary, may be removed at the same time. One of the most important matters in this department at this period is the preparation of half-hardy stock for masses. No pains must be spared to have this in good condition for planting out. Rustic baskets and vases may now be filled with soil, which should be of a rather retentive nature and the plants turned out, placing a few branches round them. Flowers of a drooping habit are the best suited for baskets, as *Fuchsias* and the like, and *Calceolaria viscosissima* with *Anagallis ærulea grandiflora* depending round the sides of the basket will not be unsightly objects.

GREENHOUSE AND CONSERVATORY.

The usual routine of watering and keeping the plants clean and properly trained is all that is necessary here for some time. Some few plants may want shifting now and then, and all the young stock must be shifted by degrees as they advance, but no particular time can be pointed out for this work; the whole depends on the state of the plants and the means of the cultivator. Keep down the temperature in the conservatory by all possible means, in order to prolong flowering; and as the syringe would soon injure the appearance of plants in flower, the rose watering-pot must take the place of it. Flood all spare parts of the house morning and evening. Continue to encourage the greenhouse plants to make rapid growth all this month, and keep the atmosphere always moist at night during this stage. As few plants are allowed to flower in this house where there is a conservatory, the syringe may be used freely in the afternoon of fine days. Training and regulating the growth of all pot plants, as well as watering and killing insects, must be attended to while the plants are growing.

STOVE.

The climbing plants in this department usually grow with such vigour, that without constant attention to stopping and tying-in they smother other plants and become quite unmanageable; this should therefore be timely attended to. As plants are removed from the greenhouse, some of the more hardy stove plants may take their places. Have an eye to the propagation of stock for succession or winter-flowering in due time. Take care to secure cuttings of such plants as *Brugmansias*, *Clorodendrons*, *Erythinas*, *Poinsettias*, *Eranthemums*, and of those useful winter-flowering plants, *Euphorbia jacinthiflora* and *Gesnera bulbosa*. As regards *Orchids*, those who have only one house to grow their whole stock in must make a compromise in point of temperature between those which are natives of hot moist countries and those which come from cooler regions. To accomplish this a free circulation of air should be kept up during the earlier part of the day, and even a little at night, if possible, accompanied with a great amount of atmospheric moisture; and to accommodate with as little sacrifice as possible such *Aërides*, *Saccolabiums*, *Dendrobiums*, &c., a considerable amount of heat should be shut up early in the afternoon.

FORCING PIT.

Most of the spring-forcing plants are now done with in this pit. Roses will now bloom in any close house, pit, &c. There are many plants, however, that may be more or less forced for the conservatory all the summer through, especially those called intermediate or half-stove plants. *Camellias*, *Azaleas*, and *Rhododendrons* that have been early forced may be grafted as soon as the young wood begins to grow hard. Of all modes of propagating rare plants, grafting is the easiest, and requires least time and trouble. All Roses intended to be forced before Christmas should be worked on the Boursault or some variety of Noisette, but Bourbon, Tea, and China Roses are better forced on their own roots. This is about the right time to get them from nurseries. The great growers can always tell the best sorts for particular purposes.

PITS AND FRAMES.

Those containing cuttings recently potted-off should be kept close until they have made fresh roots; they must be shaded during the day. Tender annuals require much attention to grow them well; they require some bottom heat, but must at the same time have a liberal supply of air to keep them from drawing; they should also be placed near the glass. These structures in some places will almost be done with for this spring's planting, but they must not be idle, as it is time to commence propagating for next year. Cuttings of dwarf *Phloxes*, *Alyssum saxatile*, *Arabis*, &c., must now be got in, and those who are very enthusiastic in flower gardening may try their hands at preparing such as *Leschenaultia formosa*, *biloba nana*, and *Baxteri*, *Cytisus racemosus*, *canariensis*, &c., for bedding-out next season. They will root freely now, and will make strong plants by the autumn. I yet hope to see masses of our finest Chinese *Azaleas*, such as *Lateritia*, *Variegata*, and *Gledanesi* turned out for the spring decoration of the flower garden.—W. KEANE.

DOINGS OF THE LAST WEEK.

DURING Wednesday the 7th inst. 0.58 of an inch of rain fell, and we had a smart shower on Thursday; the ground, which had been hoed over twice or thrice, was ready to receive it. It has done much good to the kitchen garden crops, and we have taken the opportunity to begin amongst the bedding plants. Zonal *Pelargoniums*, *Calceolarias*, Blue *Lobelias*, *Centaureas*, &c., have been so thoroughly exposed that a degree or two of frost cannot injure them.

KITCHEN GARDEN.

The ground being wet we took the opportunity to weed the walks and trim the Box edgings. The walks are never hoed: we hope never to see them so full of weeds that this operation will become necessary. It is astonishing how much can be done by

hand-picking; when the walks are wet one man can do as much as two are able to do when the ground is dry, and makes a better job, the weeds being more easily observed. Before commencing to cut the Box edgings, the gravel should be drawn off with a hoe or spade for the space of 1 foot from the edging, and the soil to the depth of an inch or two from the other side. The clippings can be readily swept up when the soil and gravel are replaced, and the workman leaves no trace except in the neat and trim appearance of the edging. We planted out the spring-sown *Cauliflowers*; drills are drawn as for rows of Peas, 2 feet apart, and the plants put out 2 feet apart in the rows. Being partially below the surface level the plants are to a certain extent protected from east winds. We pricked-out some more *Celery* plants. The first lot did not succeed well, owing to the drying winds many of the plants died. When young *Celery* plants are pricked-out in the open air, a little shade is necessary during bright sunshine.

FRUIT AND FORCING HOUSES.

Pine Apples.—We have been repotting these, and renewing the beds with fresh tan. The suckers were potted last autumn in 6 and 7-inch pots, they have now been potted into 10 and 11-inch pots. They will fill these well with roots by midsummer or later, when the plants will be rested preparatory to starting them into growth for winter fruiting. The sorts are Smooth-leaved *Cayenne* and *Charlotte Rothschild*; 10 and 11-inch pots may seem small for such robust-growing varieties, but practically they are sufficiently large. It was, we think, Mr. David Thomson who first called attention in the pages of this Journal to the over-potting of Pines, and exemplified in his own practice the superiority of small over large pots. As a rule our beds are always renewed when the plants are potted, and then if the bottom heat do rise over 100° the roots will not be injured, but will rather start into active growth. The tan beds are only 20 inches deep, and are furnished with hot-water pipes for bottom heat. We can always command 85° from the pipes alone.

Vines in all the late houses have had the lateral shoots trained into their places, and have been stopped two leaves beyond the bunch. All secondary shoots will be stopped at the first leaf as soon as they are formed; it is bad practice to let the shoots grow out of all bounds, and then cut them out in armfuls.

Melons have not done so well as usual in the earliest house; first one plant and then another has died off. We have been puzzling ourselves to find a reason for this, as no sign of canker could be observed on any part of the plants. The first one was taken up, and the roots were white and sound, but on cutting through the main stem a foot above the ground it was slightly decayed at the core. The first sign of anything being wrong is that the plants flag in the sun (we do not, as a rule, shade either *Melons* or *Cucumbers*), and growth ceases. It was ultimately ascertained that the men, though told to do so, did not empty the water out of a copper used for heating water in the winter; and the water had been used for the *Melons* after remaining for weeks in the copper, and must have been poisoned with sulphate of copper.

Cucumbers require looking over once every week to thin-out and regulate the shoots. The old wood is cut-out and new wood laid-in where practicable. Treated in this way, and the shoots trained to a trellis, the same plants will bear fruit and remain in perfect health for twelve months.

Orchard House.—The pot trees are growing vigorously; the young wood is being pinched-back, and the fruit thinned. We always thin well at this time, and never find the fruit drop-off during the process of stoning. Some of the Pear trees have been turned out of doors. All those that have little fruit upon them are turned out first, and as the season advances *Peaches*, *Nectarines*, and *Plums* are also put out of doors. It is very unwise to crowd the house with plants. If sun and air cannot act upon the fruit it will not be of good quality. *Strawberries* in the same house are now in full flower; the trusses have been thinned where forward enough. Not a dozen blind plants were turned out from three hundred pots, except in the case of one sort (and it was the same last year), *Lucas*, of which 25 per cent. failed, but we only had fifty plants of it altogether. It is a grand fruit, but it will not do to force, and is rather shy out of doors. The orchard house is syringed twice a-day, but the *Strawberry* plants are not deluged when in flower, though a slight dewing overhead helps the setting of the fruit.

CONSERVATORY AND PLANT STOVE.

Deutzias, *Camellias*, and *Cinerarias* are now past, but there will be no lack of flowers to supply their places. We have been training and placing sticks to the herbaceous *Calceolarias*; it was quite time, as the flower trusses were bending the stalks, and they will, if not tied up, break over at the neck. They have been thoroughly fumigated, so that there is little danger of green fly appearing before they finish flowering. A few of the stage *Pelargoniums* will require to have sticks placed to the flowers, but this will only be necessary for those of a weak straggling habit; compact-growing sorts are left to themselves. The Fancy sorts require no sticks. None of the *Azaleas* have

been forced this year, save a few of the white ones—the old white and Fielder; they are very late this year, but as most of them are required about the middle of June they will be early enough for us.

Roses are very fine, and those that were pruned early are now in flower without any forcing. The later sorts are much infested with the bud worm; they have to be looked over daily. Amateurs ought to know that a succession of bloom can be obtained by pruning at intervals of three or four weeks. Our earliest-pruned, in November, are now in flower, the latest-pruned, in the last week of February, will come in before those out of doors. None of them have been forced.

In the plant stove we have been training and thinning out the shoots of climbers, destroying mealy bug, and repotting Caladiums and all other hardwooded and softwooded plants requiring it. The Stephanotis, Ixoras, Gardenias, Orchids, &c., supply us with plenty of fine flowers.

FLOWER GARDEN.

We commenced bedding-out last Friday, and before this shall have appeared more than half of our plants will be out; the plants are going out well. The beds had been dug up roughly, and since the rain the lumps fall to pieces with a touch of the rake. The rain caused us to begin, as we like the ground to be in a moist state. All the plants are well watered before being put out. It is very bad practice to water them as soon as they are planted. We plant deeply, and press the soil firmly round the roots, placing some soil more loosely round the neck of the plant. In many places the "bedding-out" is done in a hurried and careless manner, the workmen not caring whether the plant is put in deep or shallow; they fill the soil over the roots, and with both hands press firmly round the neck of the plant, as if they meant to strangle it, which they are very frequently successful in doing. It is of little use to hurry over the work, even if the work is behind, "as the more haste the less speed." We are planting out a large proportion of Zonal Pelargoniums, Wellington and Ianthie this year. When these shall have become better known some of the older sorts will give place to them. They are both very distinct and excellent sorts. Vesuvius has also taken a prominent position; the habit is good, and the trusses stand up well above the foliage. Jean Sisley is a glowing distinct scarlet, but the trusses do not stand up well, and the habit is not first-rate.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

Downie, Laird, & Laing, Forest Hill, London, S.E., and Edinburgh.—Retail List of New Pelargoniums, Phloxes, Caladiums, &c.

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, N.W.—Catalogue of Stove and Conservatory Plants, Orchids, Ferns, and Bedding Plants.

W. Bull, King's Road, Chelsea.—Retail List of New, Beautiful, and Rare Plants.

TO CORRESPONDENTS.

*. We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

Books (A. C. C.).—Thompson's "Gardener's Assistant" would suit you, (J. Carr).—We know of no English work devoted to the culture of Succulents. "The Cottage Gardeners' Dictionary" includes them.

BROCCOLI.—We have received from Messrs. Watts & Son specimens of their "Northampton Hero." The heads when ready for boiling weighed between 4 and 2 lbs. They are handsome in form, delicate in flavour, and the leaves turn over the flower sufficiently to be protecting.

ASPARAGUS (H. C.).—We never yet met with any variety that we could not equal, by rich cultivation and not excessive cutting, with the common Purple-topped. The most gigantic Asparagus if ill-cultivated dwindles down to one of the common varieties.

PEACH LEAVES DROPPING OFF (J. H.).—The treatment of your trees is right, and the leaves would not drop off if the roots were in good health. Has the tree suffered from want of water at the roots? That would be the most likely cause as far as we can judge from your communication. It is not constitutional in any Peach tree to drop its leaves.

TREATMENT OF VINES BEFORE PLANTING (Black Hamburgh).—Turn the Vines out of the pots as you propose, and disentangle the roots, laying them out straight in shallow boxes. We advise you to pull the sides away from the boxes when planting them, to avoid disturbing the roots. They will succeed in any house; until your vineries are ready do not force them to grow. Plant three Black Hamburgh, one Buckland Sweetwater, and one Golden Champion in the early house. You should train two rods to a Vine.

PELARGONIUM LEAVES DISEASED (R. L. D. and J. Harrison).—It is not caused by insects. See answer to "AMATEUR" last week.

PRIMROSE VIOLET GEM (Very Old Subscriber).—Mr. Dean has no more

stock of this fine Primrose than the plant he exhibited at South Kensington. In all probability Mr. Dean will send it out himself when sufficient stock of it shall have been worked up.

PANSY BLOOMS (M. Clutterbuck).—The flowers sent have no merit; you could raise scores of better from a packet of good seeds.

FIG CULTURE (E. M. M.).—Superfluous shoots should be thinned out after the summer growths are made, and the wood should not become crowded at any time. It is bad policy to allow any fruit tree to become a thicket of young wood at the very time sun and air should have access to it, so that the wood may be matured. Any winter pruning required should be done early in spring, before the trees begin to grow. The leading growths should be stopped when they have made four or five leaves. Do not allow suckers to grow from the roots.

GRAPES RUSTED (F. G.).—After the fruit is affected there is no remedy; the Grapes are most easily affected when in a young state, at the time they are thinned, and during the next fortnight. It is caused by cold winds if the ventilators are too much opened at the time, by sulphur on the pipes, or too much vapour in the house. When the berries are stoning, and onwards, there is little to be feared. You must exercise caution when the berries are young.

WATERING VINES (H. H.).—Water at intervals of five weeks, and give three hundred gallons each time. The paths and surface of the border ought to be sprinkled with water twice a day, and more frequently in very hot weather. The Vines seem to have done very well, and you appear to understand their treatment.

FUMIGATING A GREENHOUSE AVIARY (H. T.).—Where there are plants in flower fumigation is better than syringing, but in your case, where a greenhouse is united to a dwelling, we should prefer syringing. In very many instances we syringe with soft soap and water, omitting tobacco altogether; but it is better to have both. Our plan is to mix 1 lb. of soft soap in about a gallon of hot water, and add eight or nine gallons of cold water to it; and if tobacco be used we pour some hot water over it, and mix the liquor with cold water. Boiling the whole would be better, and in your instance we should use tobacco in addition to the soft soap. As your building is not large, the liquid may be about the colour of weak tea; and in syringing avoid the flowers as much as possible. If moving your birds be not convenient, a cloth may be thrown over them for the time, the smell not being much. Fumigating may be done without costly fumigators; and for want of a better apparatus take an old flower pot—a partly broken one will do—set it on two or three stones or bricks on the floor, so that the hole at the bottom may be clear; then put in a few stones or broken crocks, over these a few hot cinders from the fire. If you have a small quantity of well-dried sticks or small split wood that will ignite freely put them on, and as soon as alight put on the tobacco, and over that a little dampened moss. If this be done properly, you have nothing more to do but escape by the door, and your enemies will be routed. This operation is best done in the evening, the house being closely shut up, and it may be repeated two nights afterwards. Better not use the tobacco too strong at first.

ANTS (J. Betts).—A broad band of wool round the stem of a standard tree prevents the ants ascending. To prevent their ascending a wall, a line of tar along the entire bottom, and along the top may be made efficient, but the tar must include the stems of the trees against the wall.

NEW BOILER (N. R. P.).—We cannot advise. Show your plan to some head gardener, and he will probably tell you whether your idea is good, price of piping, &c.

SEEDLING PLANTS FROM ST. HELENA (Subscriber).—We do not know the first of the three plants named. The second, Purple Granadilla, is probably Passiflora edulis, which has purple egg-shaped fruit; or it may be P. quadrangularis, which has purple pulp. If it is the first, it will fruit well in a vinery; if it is the second, it requires a stove. Both are best planted out in borders and the shoots trained to the roof at about a foot from the glass. They should be allowed to run, and be thinned out where much crowded. The soil should consist of turfy loam two parts, leaf soil and sandy peat one part each, and half a part of sand. Good drainage must be afforded. The plants, if grown in pots, are the better of bottom heat. The flowers should be artificially impregnated; look over the plants about noon after flowering begins, take one or more of the anthers, and apply them to the face of the stigmas. Seedlings will flower in the second year; and your plant sown last year, if encouraged, ought to flower this. We do not know the "Scarlet Thorn" of St. Helena.

CISSUS DISCOLOR LEAVES SPOTTED (G. L.).—The leaves are white-spotted; this is common in the leaves when mature. Your plant is not in free growth, the soil being probably sour and the roots inactive. See to this, and give the plant bottom heat after repotting. Afford moisture abundantly without syringing the foliage, and shade from bright sun. We presume the plant has been kept dry and cool during the winter. The last edition of the "Cottage Gardener's Dictionary" is that of 1868, and it contains all the new plants up to that date. It may be had by post from our office for 7s. 2d.

MYOSOTIS DISSEMINATA AND VIOLA CORNUTA MAJAE QUEEN CULTURE (W. E. Hertford).—Now the seeds of both now in pans or boxes of light rich loam three parts, half a part each leaf soil and sandy peat, with one-sixth of silver sand, draining well, and placing the roughest of the compost over the drainage. The soil should be made fine and sifted. Make the surface smooth, and scatter the seeds evenly, just covering the Myosotis seed with fine soil, and the Viola seed about the eighth of an inch deep. Water gently and place in a cold frame or greenhouse, shading from bright sun and keeping just moist. When the seedlings are up admit air and keep them near the glass, and when well above ground place them outside in a position shaded from the midday sun. When large enough to handle prick them out in a border of rich light soil at 3 inches apart every way, shading them from sun until established, and water them in dry weather. In October they may be planted where they are to flower, removing them with balls, or be planted double their former distance apart, in a sheltered border, whence they can be transplanted in spring to their blooming quarters.

ROGIERA GRATISSIMA LEAVES BROWNED (Constant Reader).—The leaves have been and probably are infested with thrips, which should be destroyed by fumigation with tobacco whenever seen. Plants much infested should be fumigated two nights consecutively, and twice a week for a month, as though one or two fumigations may destroy those then existing, no amount of tobacco smoke will destroy the eggs, and from these emerge in due course more insects, hence the necessity for repeated fumigations.

CABBAGES GRUB-EATEN (Dumbarton).—The plants' stems are eaten by the larvæ of the Daddy-longlegs, Tipula oleraceae. Gardeners usually call the grubs Leather-jackets. The only way to destroy them is to have the surface

of the ground round each plant stirred with a knife, and the grubs turned up killed. The *Tipula* deposited its eggs in the soil of the pasture.

TREATMENT OF CUCUMBERS (*A Reader*).—Allowing the main shoot to grow, with stopping, to the roof is right; but the side shoots we should not have pinched off at the second joint, but have let them grow to the fourth or fifth, when they would probably have shown fruit, and then have pinched them to that; or, if they showed fruit at two or more joints consecutively, we would have taken the point of each shoot out at the last show for fruit. If no fruit show before the fourth or fifth joint, we should stop at the fourth or fifth, and it will produce shoots that would no doubt show fruit freely. The after-training will consist in training in young shoots, cutting out the old weak shoots and those that have fruited, encouraging the young and vigorous to take their place. Stop at the fruit. The washing of the roof glass with a thin wash of whitening and milk is good. It will keep the leaves from being scorched, but it should be put on thinly with a brush, so as to afford but a slight shade. Lime placed about the plants to destroy snails will do no injury.

BOTTLE-BRUSH PLANT FLOWERING (*A Constant Subscriber*).—Repot the plant, if not already done, in a compost of equal parts sandy peat and fibrous loam, with a quarter of leaf soil, a few pieces of charcoal, and one-sixth of silver sand, with good drainage. Give only a moderate shift, and keep the plants rather dry until the roots are working well in the fresh soil, then water freely, and encourage growth by frequently sprinkling overhead. It should have a light airy position in the greenhouse, and after July should be kept cool and airy, but fully exposed. Maintain a sufficient amount of moisture in the soil, but do not over-water, and in winter keep moderately dry, airy, and well exposed to the light. This is the treatment we give ours, and it flowers freely. We cut out the old long base shoots after flowering.

CEPHALOTUS FOLLICULARIS AND DIONEA MUSCIPULA CULTURE (*A Constant Reader*).—The *Cephalotus* should be grown in a warm part of the greenhouse and in a compost of chopped sphagnum and sandy fibrous peat, providing extra good drainage. Keep the plant rather high, and just cover the roots. It is well to insert the pot in one of larger size, filling the interval with sphagnum, and cover it with a bell-glass fitting the inside of the outer pot. Take it off and wipe it dry occasionally. In summer the pot may be set in a saucer of water, kept full during that time, lessening the amount towards autumn, and keeping the saucer empty in winter, with the bell-glass tilted or slightly raised. The compost must be kept wet in summer, but less so, yet moist, in winter. The *Dionea* also requires a warm greenhouse, and a compost of chopped sphagnum and fibrous rough peat in equal parts, with a fourth of silver sand and pots broken rather small. The plant should be potted rather high in the centre of a 4- or 6-inch pot half filled with drainage, and the pot placed in one of larger size, the interval filled with sphagnum. Set the pot in a saucer of water, covering the plant with a bell-glass, but not resting on the moss all round; raise it a little on one side. Take it off and wipe it dry occasionally. The position should be light, but shaded from direct sun. The saucer must be kept full of water; lessen the amount in winter, but even then keep the plant moist.

NAMES OF PLANTS (*J. Bryan*).—We cannot name plants unnumbered. You must send fresh specimens, with a number attached to each. (*E. C. A.*).—*Richardia ethiopia*, formerly and still best known as *Calla ethiopia*. It belongs to the *Arum* family.

POULTRY, BEE, AND PIGEON CHRONICLE.

INSTRUCTIVE CLASSES.

AT shows young fanciers see what standard to breed up to, and I would suggest the institution of a new class that would show them how to arrive at that. What I mean is to give a class for a pen of fowls matched-up for breeding, either cockerels or pullets. Birds not exactly up to show points, but good for breeding if judiciously matched would be entered, and young fanciers would have an opportunity of procuring birds properly mated to breed with. It certainly would be a good substitute for the selling class, which might be more properly called the "rubbish class." Young fanciers would gain many a good "wrinkle" in listening to the criticisms and remarks as to the judiciousness of the mating and the likelihood of what the birds would breed. Many young fanciers get disheartened at having to labour through a lot of experience and loss of money before they arrive at anything like a knowledge as to how to mate-up for feather; but a little timely help would keep their courage up. Of course a great deal must be learned by practical experience, but in these go-a-head times one would like to hasten the acquisition of poultry lore by hearing something the men with "hen heads" could tell us. I think that end would be gained by my suggestion. A class of the kind could be tried at the Crystal Palace or Birmingham as a beginning. Mr. Wright carries out my idea in his "Poultry Book," for he not only tells you what fowls ought to be, but also how to breed them up; his is the first book that ever went deeply and thoroughly into the mating and breeding for feather. With Mr. Wright's book to guide him, a young fancier would, I am sure, arrive at a knowledge, working practically at the same time, in one-fourth the period that it would take him to do so without its assistance.

Young Pigeon fanciers are in the same boat as far as the need of some help goes, to tell them how to mate-up for properties, especially feather. They want a book written on the same principle as Mr. Wright's showing them how to do. In fact, there is a greater want felt in this respect than in poultry. As it is not always possible to buy perfect birds to breed from, one has to work with Pigeons not quite up to the show standard of colour, and in no book is one told how to breed from feather from off colours, or, indeed, from perfect ones. If all well-known breeders were to give their experience on the subject in a book

thoroughly exhaustive of the subject, it would be a great boon.—TOP SAWYER.

BRAHMAS.

I WILL state my experience of these fowls during the last seven years. Mine are Light Brahmas. I have found them hardy and healthy, having only lost three adult hens from disease during that time. I have generally kept ten or twelve. Last year I had five pullets and five hens; in January they laid 174 eggs, and during the year 168 eggs each, and I brought up sixty-nine chickens.

As regards their sitting so much, it is not invariably the case; and with respect to their laying so few eggs before wanting to sit, I know of one that laid fifty-eight eggs before doing so. I have one hen, my best, that has never wanted to sit. I am so well satisfied with them that I have gone in rather extensively for an amateur, having hatched 147 chickens, some of them in January and February. During those months I lost a good many, the weather being very cold. Since then I have lost scarcely any, having upwards of 120 fine healthy chickens, with which I hope to take some prizes this season.

The reason why I took to Brahmas at first was, that they are such quiet fowls, easily kept out of the garden, and are good winter layers.—PHILIP HAINES, *Diss.*

BLACK COCHINS.

IN your reply to "E. S.," you say the great difficulty is to get Black Cochins cocks. The two cocks I have are as black and lustrous as Black Hamburghs. Am I to expect them to turn all the colours of the rainbow? Perhaps Messrs. Vander Meersch and Howe will give their experience. In former days they were, as you describe, of various tints, but I think that difficulty has been got over, perhaps at the expense of the very yellow legs, a point I should wish to retain, if possible, in conjunction with black plumage.—F. C. HASSARD, *Sheerness.*

THERE seems to be a great deal of misapprehension about Black Cochins, and still some doubt as to whether there are such birds. Several years ago I obtained a cock and two hens direct from Shanghai; they were perfectly black, and never had the vestige of a white or coloured feather. I have bred from them largely, and the chickens though light when first hatched become black and remain so. I observe it is stated, at page 384 of your last week's Journal, that the under feathers of the cock are always white. This is a mistake, there should be no white nor coloured feathers. It is the cross between the Buff and White which produces birds which are black for one season, and after each moult become more and more coloured. I maintain that there is a true and pure Black Cochins the result of no cross—as any Chinaman will tell you—and I hope to send some specimens to the next Crystal Palace Show, at which I am glad to see they will have a separate class. If your correspondent, "E. S.," go there, he will see at least one "pure Black adult Cochins" at any rate.—C. M. HOLE, *Tiverton.*

REFORM IN POULTRY HAMPERS.

I HAVE often thought a better way might be invented of fastening the lids of exhibition hampers than tying with string. At a large show the time and trouble it takes to thread and tie some hundreds of hampers are really onerous. The fastening might be done with a self-acting spring, and opened by pressing on a bolt. I have one being made that will overcome these difficulties. The only objection I see at present is that it can be opened perhaps too freely by the railway people; but if such could be brought into use what a saving of trouble it would be in despatching the stock from a show.

This is a subject the Birmingham and Crystal Palace Committees should notice. Suppose they were to give a few prizes at their next Shows for the best exhibition hamper, I have no doubt something would be brought out superior to what we have now, and be a very interesting feature at the Show.—R. HAWKINS.

CURING EGG-EATING FOWLS.

J. SAYERS states that he knows an instance where, by taking away the egg as soon as laid and substituting a white china egg, sold by the dealers in crockeryware, cockerels who ate the eggs were cured of the propensity.

To prevent hens eating their eggs, let some eggs, equal to the number of the delinquents, be heated to boiling temperature and thrown to the fowls, and, like the children who burn themselves, they will for ever after dread the fire. As to mustard and cayenne they delight in both, but I can say nothing about aloes.—I. M. A.

DUBLIN POULTRY SHOW.—Mr. E. A. Seale writes to us to say he had no intention of accepting the cup which he had offered

and then won; but he has again presented it, and would be happy to see it pass into other hands next Show if fairly won.

EPWORTH POULTRY AND PIGEON SHOW.

THIS Show came off on the 9th inst. The town is at least six miles from a railway station, and this militates considerably against the number of entries, and more so because coupled with the fact that the classes for poultry were somewhat limited. The birds were shown under a large marquee, and were well attended while at the Show; but the pens for the large varieties of poultry were somewhat smaller than is desirable, but they were well made of wood with wire fronts and canvas backs.

Game were shown singly, the first class being devoted to Red cocks, the winners in which were Black-breasted. The first-prize bird was nearly perfect. In single hens both prizetakers were Brown Reds, the first being in good condition, but not of equal quality with the second, which, however, was not in good bloom. In the next class, for any other variety of Game cock, a finely coloured Duckwing stood first, with a fairly good bird of that variety second. In hens the first was a Duckwing and the second a Pile, the latter being of grand form but wanting in colour. Spanish were good, and the cup for the following section was awarded. The *Brahma* winners were good. The first-prize pen of *Cochins* were very good Buffs, and in nice order. There were but two classes for *Hamburghs*, and only seven entries, but the winners in both classes left little to be desired. The first prize in Spangles went to Silvers, and the second to Golden. *Polands* were one of the best classes in point of quality, most of the birds being good in all respects. The first were Golden, and the second Silver. In the Variety class Dorkings were first and *Crève-Cœurs* second. There was a class for any variety of cocks except Game, as also another for hens. In the former Spanish was first, a Buff Cochin second, and a Golden Poland third; and among hens the first was a Spanish pullet of extraordinary merit, closely pressed, however, by a capital Gold Poland. The *Bantam* classes were not equal to those of last year in point of merit, although some of the winning were very good. The cup was awarded to a pair of Black-breasted Reds.

The Ducks were not numerous, but those in the Variety class were shown in very good order, the winners being Carolinas and Bahamas.

The Pigeons were the great feature of the Show in point of both numbers and quality, the entries being large in all classes and the competition very keen. All the birds were shown singly. The Carriers were a fine lot of birds, and shown in the highest condition. The first and second prizes were awarded to Black cocks, and the third to a hen of that colour. Pouters were very good in point of shape, size, and colour, but as a rule not in the best condition. The first prize and cup for the best pen in the Show were won by a Red cock of great merit, the second by a capital White cock, and the third by a Blue cock. Tumblers were very good in all respects. A very handsome Almond cock was first, closely pressed by a good hen of that variety, and it would be very difficult to secure more perfect specimens than these. Jacobins varied in quality, some being almost perfect and others very poor. The first prize went to a Red cock, very short in the face and good in other points; the second being a very neat Black. Fantails were very fine, scarcely one bird being unworthy of notice, and all the prizes carried off by the Newark fanciers. Turbits were a large and good class, the first being an unusually good Blue cock, the second Yellow, and the third Red. Magpies were good; the first-prize bird was a very neat and small Black, the second Blue, and the third Red. Barbs were well-developed Red first, and Black second and third. The winning Antwerps were all Duns, the first and second birds being Silver cocks, and the third a dark Dun hen of great quality. Dragons were a very good lot, the three winning Blues being almost perfect. The first-prize bird was one of the best ever exhibited. In the Variety class the first prize went to a Black Trumpeter of the newly imported variety, the second to a spangled Ice of great beauty, and the third to a Black Swallow. In the Selling class were some cheap lots: first a Trumpeter, second a Yellow Jack, and third a Black Carrier. The cup for the greatest number of points was won by Mr. E. Horner.

The Cage Birds were scarcely equal in quality to those of previous years, the falling-off being mostly in point of bloom, though the winners were generally very good; but we would recommend a revision of the classes, so as to induce more competition.

Rabbits were good in all the classes, and the prizes were closely contested. In Lop-eared bucks the first was Black-and-White, in measurement 21½ inches by 4½ inches, and the second Grey-and-White, 21½ by 4½; the does, being first, a Blue-and-White, 21½ by 4½, and second, a Fawn, 21½ by 4½; an extra second being given to a very large Grey, 21½ by 4½. In Himalayan a perfect young Rabbit was awarded the first prize, while a good old one was second. The Silver-Greys were unusually good, and the winners most beautifully silvered.

There was the best display of eggs it has ever been our lot to

see, and the quality was very good, most of the shells being like enamel, and not a single stale egg could be detected. There were thirty-four entries.

The Secretary was all attention and courtesy, and scarcely leaving the tent during the whole of the day.

GAME (Black-breasted and other Reds).—Cock.—Cup and 1, C. Chaloner, Whitwell. *hc*, Sales & Bentley, Crowle; J. Mason, Worcester. 2, S. Harrison, Epworth. 3, 1, C. Chaloner. 2, Sales & Bentley. *hc*, E. Aykroyd, Leeds.

GAME (Any other variety).—Cock.—1, C. Chaloner. 2, E. Aykroyd (Duckwing). Sales & Bentley (Duckwing). *Hen*.—1, C. Travis, Sheffield (Duckwing). 2, Sales and Bentley (Pile). *hc*, E. Aykroyd (Duckwing).

SPANISH.—Cup and 1, R. Newbitt, Epworth. 2, J. Powell, Bradford. *hc*, E. Brown, Sheffield.

BRAMAS (Light or Dark).—1, T. F. Ansdell, St. Helena. 2, H. Beldon, Bingley. *hc*, W. K. Garner, Dyke, Bourne; J. Watts, Birmingham.

COCHINS (Any colour).—1, W. Harvey, Sheffield. 2, H. Beldon.

HAMBURGH (Gold or Silver-spangled).—1, H. Beldon. 2, L. Wren, Lowestoft. *hc*, J. B. Ely, Lowestoft.

HAMBURGH (Gold or Silver-pencilled).—1, H. Beldon. 2, H. E. Powers, Biggleswade.

POLISH (Any variety).—1, H. Beldon. 2, W. E. Patrick, West Winch. *hc*, W. Harvey; W. K. Patrick.

ANY VARIETY NOT NAMED BEFORE.—1, J. White (Dorking). 2, W. Harvey. *hc*, H. Beldon; Mrs. Cross, Brigg (Crève-Cœur); J. Watts; O. E. Cresswell, Bagshot (Japanese Silkies).

ANY VARIETY EXCEPT GAME.—Cock.—1, R. Newbitt (Black Spanish); 2, Col. Astley, Brigg (Dorking). 3, T. Sney, Aylestone (Partridge Cocoin). *hc*, W. Harvey. *Hen*.—1, J. Powell. 2, H. Beldon. *hc*, R. Newbitt (Black Spanish); J. Thresh, Bradford; E. W. Southwood, Fakenham (Coloured Dorking).

GAME BANTAMS (Black-breasted and other Reds).—1 and 2, Mrs. E. Newbitt, Epworth. 3, J. & G. Tonge, Epworth. *hc*, G. E. Small, Barton-on-Humber.

GAME BANTAMS (Any other variety).—1, E. Newbitt (Piles). 2, C. Chaloner. 3, S. H. Hudson, Epworth (Duckwing).

BANTAMS (Black).—1, R. Ashton, Mottram. 2, J. Earnshaw, Hollowgate. *hc*, H. Beldon.

BANTAMS (Any other variety).—1, H. Beldon. 2, W. W. Boulton, Beverley (Cuckoo Bantam). 3, J. Watts; O. E. Cresswell, Sankin.

BANTAMS (Any other variety).—Cock.—1, W. W. Boulton (Cuckoo). 2, R. H. Ashton. 3, J. W. M. Rotherham (Game). *hc*, J. C. Coupe, Doncaster (Black Red); J. Watts. *Hen*.—1 and 3, E. Newbitt. 2, J. & G. Tonge (Black Red). *hc*, J. Smith, Amcotts; W. W. Boulton (Cuckoo).

SELLING CLASS.—1, J. Powell. 2, J. H. Watkins, Hereford. 3, J. W. Corner, Eglon (Buff Cochins).

DUCKS.—*Aylesbury* or *Rouen*.—1, W. F. Dunn, Middle Rasen (Aylesbury). 2, W. Roe, North Scarle (Rouen). Any other variety.—1 and 2, W. Bunn, Pudsey (Bahamas and Carolinas).

PIGEONS.

CARRIERS.—1 and 3, E. Horner, Harewood, Leeds. 2, H. Yardley, Birmingham. *hc*, E. Horner; H. Yardley; W. Harvey (2); R. Fulton, New Cross (3).

POUTERS.—1 and Cup, W. Harvey. 2, R. Fulton. 3, J. E. Crofts, Blyth, Workshop. *hc*, J. E. Crofts; E. Horner (2); A. Spencer; W. Harvey (2); R. Fulton.

TUMBLERS.—1 and 3, J. Ford, London. 2, E. Horner. *hc*, E. Horner (2); H. Yardley; W. Harvey; R. Fulton (3).

JACOBS.—1, R. Fulton. 2, E. Horner. 3, O. E. Cresswell. *hc*, E. Horner; R. Sanders, Leven; W. Harvey; A. A. VanderMeersch, Tooling; R. Fulton; C. W. Harvey.

FANTAILS.—1, J. Walker, Newark. 2 and 3, J. F. Loversidge, Newark. *hc*, Mrs. T. C. Newbitt; J. K. Capps, Spalding; E. Horner; W. H. Tomlinson, Newark; J. Walker; W. Harvey; O. E. Cresswell.

TURBITS.—1, C. Lythe, Colingham. 2 and 3, J. E. Crofts. *hc*, J. E. Crofts; E. Horner; W. Harvey; O. E. Cresswell. *hc*, J. Watts.

MAGPIES.—1, R. Fulton. 2, J. T. Cater, Colchester. 3, J. E. Crofts. *hc*, C. Lythe (2); E. Horner (2); W. Harvey; J. Hairsine, Hull; J. E. Crofts.

BARBS.—1 and 3, H. Fulton. 2, E. Horner. *hc*, E. Horner; H. Yardley (2).

ANTWERPS.—1, F. Woodhouse, Blackburn. 2 and 3, J. Crossland, jun., Wakefield. *hc*, F. Woodhouse, Blackburn; E. Horner; H. Yardley (2); J. E. Crofts.

ANY OTHER VARIETY.—1, H. Yardley. 2, E. Horner. *hc*, J. E. Crofts; J. Watts; J. Ford. 3, J. E. Crofts; R. Fulton.

ANY OTHER VARIETY.—1, E. Horner. 2, W. Harvey. 4, J. Watts. *hc*, R. Fulton; J. E. Crofts; Col. Astley (Kunt); J. Watts; E. Horner; W. Harvey; J. A. Ford (Dunette) (2); A. A. VanderMeersch.

SELLING CLASS (Single).—1 and 2, C. W. Harvey. 3, R. E. Sanders. 3, P. R. Spencer, Hereford. *hc*, W. Andrews, Spalding; P. K. Spencer.

CUP FOR POINTS.—E. Horner.

CAGE BIRDS.

CANARIES.—*Yellow*.—1 and 2, T. Green, Gainsborough (Norwich). *hc*, R. Barber, Gainsborough (Matteas). *Buff*.—1, T. Green (Norwich). 2, G. Yates, Thorne. *hc*, T. Green (Norwich). 3, C. James, Epworth. *Green or Variegated*.—1, Master T. Dawson, Epworth. 2, T. Green (Green Norwich). *hc*, T. Green (Marked Norwich); R. Barber.

GOLDFINCH.—1, Mrs. Wainwright, Burnham. 2, W. Temperton, Burnham. *hc*, T. Green; W. Temperton; J. Boyes, Epworth.

LINNETS.—1, W. Temperton. 2, T. Kirk, Burnham. 3, J. Boyes. *hc*, W. Gavil, Taormine.

ANY OTHER VARIETY.—1, Mrs. E. Newbitt (Parakeet). 2, T. Green (Golden-spangled Lizard). *hc*, R. Barber (Linnet Mule); G. Lindley, Epworth.

RABBITS.—*Lop-eared*.—*Buck*.—1, J. & A. Weaver, Leominster. 2, A. H. Easten; Hull. *hc*, F. Banks, London; Shaw & Allison, Sheffield. 3, F. R. Crawshaw, Sevenoaks. *Doe*.—1, A. H. Easten. 2, F. R. Crawshaw. *hc*, Master S. M. Peace, Thorne; J. & A. Weaver, Himalayan. 1, G. W. Hardman, Wakefield. 2, B. Ball, Bradford. *hc*, Master S. M. Peace; S. Ball; S. G. Hudson, Hull.

Silver-Grey.—1, S. Ball. 2, A. H. Easten. *hc*, W. Fox; E. S. Smith. 3, G. W. Hardman; J. L. Varley, York.

JUDGES.—*Poultry and Pigeons*: Mr. R. Teebay, Fulwood, Preston, and Mr. E. Hutton, The Aviaries, Pudsey, Leeds; *Cage Birds*: Mr. E. Hutton; *Rabbits*: Mr. E. Hutton, and Mr. J. Spinks, Gainsborough.

BRAMAS.—I have a pullet (a cross between Game and Poland) that commenced laying at five months old, on October 17th, and up to May 4th has laid 111 eggs, which realised 16s. 6½d. I doubt if any Brahma have done so well, but I shall be glad to hear if any Brahma fancier has pullets that have exceeded this number of eggs. I shall be obliged if a few of your occasional correspondents will give us the results of their best egg-producing Brahma pullets up to the present time.—J. K. L.

NEWCASTLE-UPON-TYNE POULTRY, PIGEON, AND CANARY SHOW.

—Owing to business engagements I have had to resign the post of Honorary Secretary to this Show, to which Mr. John G.

Dunn has been appointed as my successor. I take this opportunity of thanking exhibitors for their patronage and support to our Show, and hope they will continue the same.—HENRY O. BLENKINSOP.

OTLEY (WHARFEDALE) POULTRY SHOW.

This Show was held at Otley on the 10th inst., and was in every respect a success, the day being fine and the visitors numerous. The schedule having been remodelled and the value of the prizes greatly increased, the results in all sections were much better than usual.

Game were of fair quality throughout. The cup was awarded to a single Brown Red cock. *Spanish* were few in number, but extremely good as regards the winners. The cup was awarded in this class to a pen containing a most extraordinary pullet. The *Cochins* and *Brahmas* were good, and in *Polands* the competition was extremely keen; all the prizes were awarded to Golden *Polands*. *Hamburghs*, as usual here, were a grand display, scarcely one bad pen being shown. The cup was awarded to the Silver-pencilled. There were five classes for *Bantams*, three of which were for Game. The winners in Reds were all of the Black-breasted variety; and in the next class *Duckwings* and *Piles* were respectively first and second, and the cup was awarded to a stylish Black Red cock, wanting somewhat in colour, but otherwise good. Black *Bantams* were large, but otherwise good, and a handsome pair of Golden *Sebrights* were first, and *Whites* of rare quality second in the Variety class; and in Any other variety the first and second prizes went to *Crève-Cœur*s, and the third to *Silkie*s.

Ducks were not numerous, and the *Rouens* failed in beak and plumage, but the *Aylesbury* were wonderful for the time of year. In the Variety class of Duck, which is always attractive, *Bahamas* were first, and *Carolinas* second.

The *Pigeons* were well protected under a marquee, and were very numerous. The cup was awarded to a capital Red Pouter cock; the second and third prizes in that class were *Blues* of good quality. In *Carriers* all the winners were cocks, shown in high condition; the first and second-prize birds were Black, and the third *Dun*. *Barbs* and *Jacobins* were well represented, and the winners good specimens; but in point of uniformity of quality no class approached the *Dragoon*, no bird winning by many points as compared to those in arrears. The *Short-faced Tumblers* were also a good lot, but the winners were all *Almonds*. The *Long-faced* prizes were divided among *Red Mottled* and *Black Bald*, a very grand *Blue Baldface* being commended. Of *Turbits* the first was a shell-crowned Red, second a spike-crowned Red, and third a most exquisite coloured *Yellow Trumpeters* were all of the newly-imported kind. In *English Owls* a *Light Blue* cock of the correct type was first, and a *Powder Blue*, wanting only in colour of eye, second. The *Maggies* were good, as also *Antwerps*, both *Long* and *Short-faced*. The entries in this section amounted to no less than fifty-seven. The *Selling* class was an anomaly it is difficult to explain; no price having been fixed, and the consequence was that the winning birds were of great value, and evidently never intended for sale.

GAME.—Red.—1, J. Lund & Son, Silsden. 2, J. W. Thornton, Bradford. 3, E. Aykroyd, Eccleshill. *hc*, H. E. Martin, Fakenham. *Any other colour*.—1, E. Aykroyd. 2, B. Barter, Sheffield. 3, W. F. Entwistle. *Cock*.—1, Cup, and 2, E. Aykroyd. 3, E. Martin.

SPANISH.—1, Cup, J. Powell, Bradford. 2, H. Beldon, Bingley. 3, J. Thresh, Bradford.

COCHINS.—1, C. Sidgwick, Keighley. 2, W. Harvey, Sheffield. 3, H. C. & W. J. Masoo, Drighlington.

BRAMA POULTRY.—1, R. Hutchison, Littleborough. 2 and 3, H. Beldon.

DORINGS.—1, J. White, Warley. 2, W. H. King, Rochdale. 3, J. Newall, York.

POLANDS.—1, W. Harvey. 2 and 3, H. Beldon.

HAMBURGH.—Golden-spangled.—1, H. Beldon. 2, W. Driver, Keighley. 3, J. Robinson. Silver-spangled.—1, J. Robinson. 2, H. Beldon. 3, Ashton and Booth, Mottram. Golden-pencilled.—1 and 2, H. Beldon. 3, W. Driver, Keighley. Silver-pencilled.—1, Cup, 2, and 3, H. Beldon. *Black or any other variety*.—1, J. Smith, Bingley. 2, C. Sidgwick (Black). 3, J. Moore, Bingley.

GAME BANTAMS.—Red.—1, F. Steel, Halifax. 2, W. F. Entwistle. 3, H. Butler, Bradford. *Any other colour*.—1, F. Steel. 2, G. Noble, Dewsbury. 3, F. Steele.

COCK.—1 and Cup, F. Steele. 2 and 3, W. F. Entwistle.

BANTAMS.—Black.—1, W. H. Shackleton, Bradford. 2, J. Waddington, Guiseley. 3, J. Preston, Alverton. *Any other variety*.—1, H. Sharp, Halifax. 2, H. Beldon. 3, R. Frew, Kirkcaldy.

ANY OTHER VARIETY.—1, J. Smith, Ripon. 2, W. Harvey. 3, C. Holdsworth, Harrogate (Japanese).

DUCKS.—*Roan*.—1, C. Holt, Rochdale. 2, H. B. Smith. 3, J. Newton, Silsden. *Aylesbury*.—1, C. Holt. 2 and 3, R. Hutchinson. *Any other variety*.—1, W. Bunn, Rudgey (Bahama Teal). 2 and 3, H. B. Smith, Preston.

SELLING CLASS.—1, J. Powell, Bradford. 2, H. Beldon. 3, W. Sunderland, Bingley.

PIGEONS.

POUTERS.—1 and Cup, T. Hawley, Bradford. 2, E. Horner, Harwood. 3, W. H. Tomlinson, Newark (Trent).

CARRIERS.—1, 2, and 3, E. Horner.

BARBS.—1 and 2, E. Horner. 3, H. Yardley, Birmingham.

JACOBIANS.—1, R. Frew. 2, W. Harvey, Sheffield. 3, E. Horner.

DRAGONS.—1, H. Yardley. 2, E. Horner. 3, J. A. Ford, Cheshire.

TUMBLERS.—*Short-faced*.—1, G. Cresswell, Huddersfield. 2, E. Horner. 3, H. Yardley. *hc*, W. Harvey (2); E. Horner. *Long-faced*.—1 and *hc*, D. Riddough, Jun., Bradford. 2, W. Harvey. 3, A. Bentley, Baildon.

FANTAILS.—1, E. Horner. 2, and 3, J. F. Lovelidge, Newark.

TURBITS.—1, J. E. Crofts, Blyth. 2, G. Cresswell. 3, W. Harvey.

TRUMPETERS.—1, W. Harvey. 2 and 3, E. Horner.

OWLS.—*English*.—1, J. Thresh, Bradford. 2, H. G. Poole, Bradford. 3, J. Ingham, Halifax.

MAGPIES.—1 and 2, J. E. Crofts. 3, J. W. Yeafon. *hc*, W. C. Dawson.

ANTWERP.—*Short-faced*.—1, E. Horner. 2, D. Riddough, Jan. 3, H. Yardley. *Long-faced*.—1, J. Rhodes, Harwood. 2, W. Ellis, Leeds. 3, J. Bishop, Skipton.

ANY OTHER VARIETY.—1, H. Beldon. 2, J. E. Crofts. 3, W. C. Dawson.

SELLING CLASS.—1, E. Horner. 2, W. Harvey. 3, J. Rhodes, Harwood.

RABBITS.

LONG-EARED.—*Duck*.—1, F. Banks, London. 2, J. Oldham, Bradford. *Doe*.—1, J. Hume, York. 2, J. Falding, Leeds.

ANY OTHER VARIETY.—*Duck*.—1, S. Ball, Bradford (Himalayan). 2, C. Anton, York. *Doe*.—1, G. C. Hutton, Bradford (Angora). 2, G. W. Wardman, Wakefield.

JUDGES.—*Poultry*: Mr. C. W. Brierley, Middleton, near Manchester. *Pigeons and Rabbits*: Mr. J. Crossland, Wakefield.

FERTILITY OF DUCKS' EGGS.

ON March 20th, at page 251, you replied to a correspondent ("M. H.") about the fertility of Ducks' eggs, and I supposed your reply to mean that the eggs would not be fertile unless the birds had access to water. If so, my experience does not agree with yours. Last year I had a brood of *Rouen* ducklings, and I have kept a Duck and drake till now. They ran with the hens in an enclosed yard, and had no water except in a drinking fountain. There is no water near supposing them to escape from the yard, and yet, so far, I have had a Duck from every egg I have set, some of the ducklings being now seven weeks old. The drake is very vicious, and runs the hens so much that I shall be obliged to sell him. From this you will rightly suppose he was reared by a hen, as ducklings reared by a Duck do not trouble the hens.—R. R.

POINT CUPS FOR PIGEONS.

THE desirability of giving point cups for Pigeons is still a vexed question. There is no doubt that the system is unfavourable to the amateur who keeps only two or three varieties, but at the same time it is a good thing for dealers, and those who keep a great many different kinds. However good the birds may be themselves, there is always a doubt whether they will win, for in many classes only a certain standard of perfection can be reached; and when there are several pens of birds of nearly equal merit, but all differing from each other a little, then the judge is guided by his own fancy at the time as to which he will place first and second; so that when a great number of entries are made the exhibitor knows he must expect a certain number of disappointments, but if he wins a point cup it makes up for his losses. If an exhibitor wishes to make a great number of entries at a show, he looks to see whether there is a point cup which will make it worth his while to run a little extra risk. In my own case, when a point cup is given at any show at which I exhibit, I generally make an additional entry; thus, to win two prizes I should make three entries if there were a point cup, but if there were not, I should only make two to win the two prizes. The third entry in this case would be for luck; it would give me a better chance with the prizes, and I might possibly win the cup. If I thought I should win the cup I should certainly make the third entry. But then, again, sometimes a point cup prevents me from making any entries at all, for I only keep four varieties, and there are often as many as twelve classes for different kinds of birds which I do not keep. Of course in such a case I have no chance to win the point cup, and those who hope to do so can afford to send better birds to win both the cup and the prize money, than I can to win the prize-money alone. It seems to me that the money spent on the cup had better be used to increase the value of the money prizes, for dealers will always make a fair number of entries when there are good money prizes, and then both small and large exhibitors will have an equal chance for the premiums.

It is scarcely worth while for a small exhibitor to show where a point cup is given, unless he can borrow birds to try and win the cup as well. I never think it worth while to do this myself, but there are some who do. I think, however, it is seldom done, on account of the expense and trouble. I do not see anything dishonest in borrowing birds for this purpose, though I think it a pity that it should be done. It is generally supposed that birds are shown to enable others to judge of the quality of the birds at home, and in this way to obtain purchasers; if this is so, those who borrow create a false impression as to the quality of their stock. But while there are point cups there always will be borrowing more or less, and those who give the cups encourage it. I think that on this account a point cup is even more objectionable than a cup for the best pen in a given number of classes, to win which is the greatest lottery I know. For my own part I prefer money prizes for each class, and when they are worth having there will always be plenty of entries.—H. M. MAYNARD, *Holmewood, Ryde, Isle of Wight*.

WHITE JACOBIANS.—If the Crystal Palace Poultry Committee are agreeable I shall be pleased to join "BLACK JACOBIN" in offering a subscription towards prizes at their next show for White Jacobins, single birds, and on hearing their decision will

collect among my fancier friends.—A. A. VANDER MEERSCH, *Tooting.*

NADIRING.

THERE is no better-established law in bee-keeping, than in whatever description of hive we employ, honey will be found stored in the upper, brood in the central and lower portions, during midsummer, to the very floor-board. Based on this principle, the storifying system, in contradistinction to the ordinary or single hive, and say one-super mode, consists of a series of boxes or storeys; the deeper ones are placed in succession beneath the stock box progressively as the wants of the colony demand, and are termed nadirs, and are simply intended as an elongation or extension of the breeding space. On the other hand, in proportion to the flow of the honey harvest, the shallow boxes termed supers are placed one over the other, above the stock, as an extension of the honey room. Consequently it was with no little surprise I found so able an apianian as your excellent contributor "B. & W." fall into the palpable error at page 365, that the nadir is "placed under a stock, not for breeding purposes, but with a view to obtaining honey." If your correspondent started a storified colony by way of experiment, he would very soon be undeceived, finding the yield of nadir honey meagre indeed.

"B. & W.'s" plan of placing a super in the position of a nadir, with the view of getting comb started therein, although ingenious in conception, is valueless in practice. So placed, the super is accepted by the bees as a nadir, and as usual a mixture of drone and worker combs will be built, and my experience is, the shallower the nadir the greater the proportion of the former, spoiling the value from the well-known coarser appearance of a super wholly or in part composed of drone cells; then again, there is the avidity with which bees store pollen in nadirs from the start till the completion, indeed, usually much in excess of their wants, still further spoiling the beauty of a super as well as the flavour of the honey. Lastly, further discoloration must ensue from the entire traffic of the colony passing over the combs while in progress.

Better far to place the super at once in its proper position, and when the hive is full and honey to be had open the end communications thereto; the bees pressed up in the first instance for mere elbow room, form in an ever-increasing heap on the top of the stock box, till, true to another law of their nature, they suspend themselves like a cluster of grapes to the bars of the super, when, finding the guide comb placed in anticipation by the bee-master, preferring work at all times to enforced idleness, they cannot resist the temptation to nibble and elongate; others, espying the chinks and crevices between the stock and super, take a run out, returning with a few loads of propolis, and abhorring, as they always do, a vacuum, proceed at once to stop all up. Attracted by the proceedings upstairs, other idlers join the working band, and the super is fairly started; then the bee-keeper nadirs with another stock-box, and the wants of the colony in storing and breeding space being thus fairly met, besides the exhilarating effects of the transfer from a stifling to a purer atmosphere the scents are recalled, and all thoughts of emigration from their dearly-loved home abandoned. By so studying their wants, and granting space in a progressive ratio, in keeping with the population and season, such harvests have been reaped as has fallen to the lot of—A RENFREWSHIRE BEE-KEEPER.

SPRING BEE-FEEDING.

THE "word of warning" in reference to feeding weak stocks has not been given a moment too soon by your esteemed correspondent "B. & W." Already, through inattention to their apiaries, many bee-keepers have lost hives that were well tenanted and flourishing only a few weeks ago. Since the beginning of March bees have had to depend almost entirely upon their stores. Pollen has been abundant, but scarcely a drop of honey could be obtained. The provision which at one time was reasonably deemed sufficient to meet the necessities of the spring months has proved utterly inadequate, and in consequence many bees are dying of famine, whilst others are leaving their legitimate labours and giving themselves up to habits of plundering.

On the 17th ult. one of my best hives was entered by free-booters and brought to the verge of ruin. The occupants, which were numerous and had three combs well filled with brood, became utterly demoralised, and ceased to offer any resistance to their foes. They showed no resentment when roughly handled, which proved how effectually they had been subdued. Every honey-cell was emptied of its contents, and, if timely aid had not been given, bees and brood would have been a lifeless mass in the course of a couple of days.

Now, to leave a hive in this condition in its place and feed it is, as is well known, just to invite the enemy back. But it is often inconvenient to remove it to the distance that is necessary to save it from being again found out by its persecutors. It was so in my case, and I resolved to try a plan which could be

carried out with little trouble, and which would probably prove effectual in restoring courage to the dispirited bees and preventing the marauders from renewing their assaults. Waiting, then, till darkness had sent all robber bees home, I carried off the assailed hive to a room lighted by only one small window 18 inches square. Immediately in front of this window the hive was placed, having its entrance about 6 inches from the base, so that if the bees went out and coursed over the window they might, when exhausted, find it easy to return to their dwelling. The hole in the centre of the crown-board was then opened, and a liberal supply of food given. The bees, no longer molested, quickly stored it up, and in less than three days they were in possession of as much as would meet their wants for three or four weeks, and from this feeding under partial confinement not more than a dozen perished. To provide against the danger that would meet the hive on being restored to its original site, a box with empty combs was placed where it stood. For one whole day the robbers were allowed to weary themselves by paying fruitless visits to it. On the succeeding day they were allured from it altogether by some combs half filled with honey laid down at a little distance.

At sunset, with its outward appearance somewhat changed, the removed stock resumed its former position, and next morning found it the busiest in the apiary and more than a match for its foes. It has not been assaulted since.—R. S.

OUR LETTER BOX.

BOOKS (*T. B., Leeds*).—We know of no book relative to hens and chickens exclusively. Enclose seven postage stamps with your address, and order the "Poultry Book" to be sent you by post. Take in Wright's "Illustrated Poultry Book." It is publishing in shilling monthly parts.

HENS TRESPASSING (*Sussex*).—You might recover if you sued in the County Court, but you had better follow the American's advice—

"If your neighbours' hens come off from across the way,
Don't be enrag'd, but make a place for them to lay."

POULTRY FOOD (*Ignoramus*).—Both authorities are right. If you use the mixture recommended in the book, the ingredients are calculated to modify each other. Rice alone is "potatoes without nothing," for there is no fat or flesh-forming constituent in it. Potatoes alone are too apt to cause internal fat. If you observe your fowls decline give no rice, but substitute barleymeal or ground oats. If the hens lay shell-less eggs, or show other symptoms of internal derangement, discontinue the potatoes, and substitute rice until the symptoms are removed.

SPANISH AND MINORCA FOWLS (*G. F. W.*).—As a rule the difference between Minorcas and Spanish is small. It generally consists in dubbing such of the latter as have exchanged the pure white face and drooping comb for a red face and pink comb, by the name of the former. The cross between them would not be important in any way. We are and have always been inimical to crosses. We believe there is nothing that can be reasonably expected from a fowl that cannot be had from a pure one. If you keep pullets of this month you will have eggs for early sitting next year. We need hardly say we advise pure breeds; but if you mean to cross, we advise, if you work with the material you have in hand, that you put the Brahma cock with the Minorca hens. Spanish are good, but not early layers; they do not sit, and it is against reason to cross sitters and non-sitters. If you wish to depend on your eggs directly after Christmas, you will do well to pen your birds accordingly, not later than October.

BANTAM EGGS NOT FORTHCOMING (*H. G. W.*).—We cannot fancy that a hen goes to her nest, stays the usual time there, and comes off cackling without having laid an egg. We should say either she or another eats it, "yolk and white, and hard shell too." If however, we are wrong, she is not right. Give a copious dose of castor oil, at least a tablespoonful, and repeat it after two days. She will then soon lay unless there is organic disease, and if so, kill her. We cannot believe that any hen of any breed can pass her second and third years without laying. Do not condemn her until you have reduced her fat.

COLOUR OF BRAHMA EGGS (*X. Y. Z.*).—Do not quarrel with the colour of the eggs. Some believe in shape, some do not. We are of the latter. It is thought the colour of the egg is affected by the weather, being darker in hot weather. We have seen none approaching to mahogany colour. Those who believe in it say the pointed eggs produce cocks, the round ones pullets. We are trying some experiments, and shall discourse learnedly on them if they furnish the text.

AGE OF TURKEY COCKS (*A. H. J.*).—Turkey cocks are awkward birds, and young ones do not always prove profitable when the hens come off their eggs. One that has avoided this reproach the first season is prized as a stock bird for a second, but when Turkeys are kept for profit he is seldom kept for a third. A tried yearling bird is always kept in reserve. This is easily done, as with these birds the cocks are used as rams are with sheep, and always with success. We have known a hen taken from a brood and shut in a loft; at the end of six weeks she began to lay, she sat and brought out twelve pullets. She had been six weeks in the loft by herself.

ULCER IN A BRAHMA HEN (*B. M. C.*).—The large crop if it were filled with liquid is unimportant. We expect the ulcer has nothing to do with the crop, but is attached to the breastbone. Such cases are in almost every instance incurable. It is probable she will go on laying, and when she has done you will do well to kill her. Potatoes are very bad food either raw or cooked, and boiled cabbage is worse. If you give cabbage, give it raw and whole, so that the weight will resist the pull necessary to tear off a piece. The best green food is a large sod of growing grass, and next to that lettuce.

EXTENSIVE POULTRY-KEEPING (*J. K. L.*).—Two hundred hens should have from five to six acres of grass. Five hundred should have twelve acres all grass, unless there be a dry plantation or shrubbery upon it. Either of the latter is desirable. The soil should be light, and the land on a moderate slope. Such land is soon dry after rain, and allows the birds to scratch and bask. We always have several houses where large numbers of fowls are kept.

We should build three or four houses, each 18 feet square, and as lofty as possible. They may be inexpensively built of wood, well ventilated and lighted. It is in every way preferable to allowing a large number to roost in one house. We should require 21 feet square for a hundred hens. If you mean to have eggs only, you should have Spanish, Hamburgs, Brahmas, and Creve-Coeurs. We do not think laying properties are improved by crossing.

GAPES (L. Bradbury).—Give each chicken affected a pill of camphor the size of a small pea every second day until cured. To prevent the disease keep a lump of camphor in the water they drink.

PIGEON NESTING BUT NOT LAYING (H. H.).—A Pigeon doing this will usually nest for ever, but never lay—in fact, she is no breeder. You did quite right in giving her other eggs, it was her only chance and might revive the power of breeding.

FOOD FOR YOUNG CANARIES (W. H.).—Boll an egg hard and allow it to get cold. This is important, for if the yolk of a warm hard-boiled egg be rubbed-up or chopped fine, it will harden and dry very rapidly. The difference can easily be seen by cutting a cold egg through the middle, and also a hot one. The cold one will remain unchanged during the time that the surface of the hot one will dry and crack; and if the whole yolk be so exposed by being chopped fine, every fragment will present the same dry, caked appearance. Pass both the white and the yolk through the egg-box, which is simply a box about, say, 6 or 8 inches square (larger or smaller according to fancy or the requirements of the bird room), having no top, but a bottom of perforated zinc securely nailed on. The egg can be squeezed through this with a table-knife, much or little as occasion may require, and then mixed with its bulk of bread-crumbs rubbed fine in the hand. Some breeders soak the bread, which should be stale, squeeze it dry, and mix with the egg. Others use one or other of the many plain or fancy biscuits which are sold in such variety; but nothing is better than bread-crumbs. This is a good stock diet for nestlings. When a hen is disposed to feed she will feed with anything and needs no tempting delicacies, but in case of disinclination add a little crushed hempseed. Let the food be fresh at all times. Do not allow it to remain in the egg-trough till it turns sour. Keep up a supply of fresh green food, such as groundsel, chickweed, or lettuce, and see that the seed-box is duly replenished with clean white canary seed free from dust and dirt. Summer rape and linseed may be given occasionally by way of change.—W. A. BLAKSTON.

BULLFINCH AND CANARY—PROTECTION OF EGGS (M. G.).—Use every precaution to protect the eggs. When you think the hen is about laying, remove the Bullfinch the night before, and do not replace him till you have secured the egg. It will scarcely be necessary to replace him again, but you may as well do so, that you may leave no stone unturned to ensure success. I should much like to know the result, and, if successful, to see the progeny.—W. A. BLAKSTON.

RESTLESS CANARY HENS (A Reader).—I think if you do as you suggest—"wait a little longer," the good time which is coming will come; and as you say your hens generally are troubled in the same way, it may be accounted for on the ground that they are all a little backward. Give some stimulating food—egg and hempseed prepared as above, and I have no doubt you will soon have plenty of young ones.—W. A. BLAKSTON.

PAIRING CANARIES (J. A.).—I think no person can be called "stupid" who has the sense to inquire into the why and because of any effect he sees produced, and has also the sense to think out a theory of his own, even if that theory be erroneous, which I think yours is. You are in quest of a "very pale" Jougne hen to pair with a Jougne cock, with a view to getting colour, and object to a Buff or Mealy hen, because you "don't want to introduce Buff blood." I take that to be your position: well, why not a high-coloured Jougne hen for your Jougne cock? Don't you think you would get more colour? Certainly you would; but bear in mind, at the expense of feather. It may be accepted as a principle that pairing Jougne and Mealy produces both colour and compactness of plumage. Jougnes and Meales are not, as you imagine, distinct breeds, but merely separate classes of the same variety, and are produced in pretty nearly equal proportions in the same nest. If I misunderstand your object write again. I say this because I am not sure whether you wish to breed for colour, or whether you are aiming at producing white birds. Do I believe in the marigold theory? I will put our question in another shape. Do I believe in the theory that the colour of a Canary can be affected by feeding? I will tell you what I believe in. I believe in Mr. E. Bemrose, of Derby, who exhibited two remarkably high-coloured birds at the last Crystal Palace Show. The fact of their being officially passed over by the Judges without a reason, and the reason being subsequently anonymously stated in the Journal will be in the memory of all interested in Canary matters. Mr. Bemrose assured me the birds were genuine, that he had moulted them himself, and that the colour was owing to the feeding, and to nothing else. Mr. Bemrose and the colour theory are therefore inseparable. I believe Mr. Bemrose to be a gentleman who would not stoop to such a meanness as a falsehood, and who would neither stain a bird nor cast in his lot and herd with those who do, and therefore I believe in the "Marigold theory" as *un fait accompli*. Incipient asthma may become chronic. See "FRINGILLA CANARIA" on diseases.—W. A. BLAKSTON.

BEES DWINDLING AWAY (Ligurian).—It is difficult sometimes to account for bees perishing and becoming so weak in population while so well provided with honey. It is a very common subject of complaint this spring. The winter and spring have been exceedingly unfavourable for bees. We do not approve of the inverted glass for ventilation and condensation of moisture. The dead bees may have been gradually carried off by the living. The tomits could not materially affect the population. It is most likely that the queens died during winter. If the combs are badly mildewed, we should cut the worst affected parts away; if not, we should let them remain, and repopulate the hives with swarms. The bees would soon put the combs to rights. Ligurians are not more liable to internal dampness than other bees.

WOONNERY HIVES (Wollaston).—1. They are 14½ inches square by 9 inches deep, inside measure. 2. The bars, when in place, should be 1½ inch from centre to centre—that is, half an inch between each. 3. Just sufficient for the bars. 4. Bars are seven-eighths of an inch wide. This gives a measurement of 14½ inches for the box, but Mr. Wollaston preferred to have it quite square, and used to spread the other quarter of an inch over the spaces generally, or towards the sides. Recesses of an inch wide for bars only seven-eighths of an inch wide would give too much play.

RABBIT EATING HER DUNG (F. M. N.).—The habit is very unusual, and we would recommend a little milk as a safe liquid, or two tablespoonfuls of water once a week in warm weather, and more especially when the doe is about to litter. Give her carrots and crushed oats, sweet hay, a little green

clover when ready, or vetches, but not when wet; in fact, all green food should be given sparingly. Roots are always safe. Allow a little water or milk to be in the hutch at the time of littering, as intense thirst generally accompanies that event.

MET EOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Baromet. ter at Sea level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1873.										
May.										
We. 7	29.571	51.5	47.1	S.E.	deg.	deg.	deg.	deg.	deg.	0.520
Th. 8	29.546	49.8	47.5	N.	49.6	60.2	41.5	96.8	35.9	0.010
Fri. 9	29.495	55.4	50.8	W.	49.4	61.4	42.6	97.7	43.0	—
Sat. 10	30.182	58.5	48.6	W.	49.7	62.6	43.5	95.6	56.0	—
Sun. 11	30.187	60.2	55.3	S.W.	50.1	64.3	42.1	117.8	34.8	—
Mo. 12	30.215	61.0	54.6	N.	51.6	69.2	50.3	120.2	47.0	—
Tu. 13	30.179	55.2	47.4	S.E.	51.1	70.9	46.9	123.1	48.4	—
Means	29.962	55.1	50.2		51.1	64.7	44.0	110.2	39.4	0.630

REMARKS.

7th.—Rain in early morning, but fine by 10 A.M., and so continued till between 2 and 3 P.M., when rain commenced and continued more or less all day.

8th.—Much rain in the night; fine morning and pleasant day, though there were several showers, but they were slight; a fine night.

9th.—A lovely morning; rather stormlike in the afternoon. Only a few drops of rain fell here, but the rain was very heavy at Blackheath and its neighbourhood.

10th.—Fine morning; the day fair, but more cloudy than the preceding one.

11th.—Fine morning; and all day rather cloudy between 6 and 7 P.M., fine afterwards, but wind rather high.

12th.—A most lovely day throughout, and followed by as fine a night.

13th.—Fine morning; rather clouded over at noon, a brisk and rather cool wind; fine afternoon and evening.

A very fine week, especially the latter part; temperature about 3° above last week. Sun very powerful on the last three days.—G. J. SYMONS.

COVENT GARDEN MARKET.—MAY 14.

A FAIR average supply and good attendance, the midland markets sending buyers now to a considerable extent. Importations of foreign produce have largely increased, comprising among other articles Apricots, Cherries, and Strawberries. St. Michael's Fines seem to be over now, as the Orange season has ended, and few vessels call there. New Potatoes are well supplied at from 2d. to 3d. per lb.; good old ones scarce.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	3	0 to 5	0	Mulberries.....	½	lb.	0 0 to 0 0
Apricots.....	doz.	3	0	4	0	Nectarines.....	doz.	0	0 to 0 0
Cherries.....	½	box	4	0	0	Oranges.....	½	100	4 0 to 10 0
Chestnuts.....	busbel	0	0	0	0	Peaches.....	doz.	18	0 30 to 0
Currants.....	½	sieve	0	0	0	Pears, kitchen.....	coz.	1	0 3 to 0
Black.....	do.	0	0	0	0	dessert.....	doz.	6	0 18 to 0
Figs.....	doz.	10	0	15	0	Pine Apples.....	lb.	8	0 12 to 0
Filberts.....	lb.	0	0	0	0	Plums.....	½	sieve	0 0 to 0 0
Cobs.....	lb.	2	0	2	6	Quinces.....	doz.	0	0 to 0 0
Gooseberries.....	quart	1	0	2	0	Raspberries.....	lb.	0	0 to 0 0
Grapes, bothhouse.....	lb.	8	0	15	0	Strawberries.....	½	coz.	0 6 to 1 6
Lemons.....	½	100	6	0	10	Walnuts.....	busbel	15	0 30 to 0
Melons.....	each	6	0	12	0	ditto.....	½	100	2 0 to 2 6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0 to 6	0	Mushrooms.....	pottle	0	0 to 2	0
Asparagus.....	½	100	8	0	0	Mustard & Cress.....	punnet	0	2 to 0 0
French.....	doz.	6	0	12	0	Onions.....	½	busbel	3 0 to 6 0
Beans, Kidney.....	½	100	1	6	2	pickling.....	quart	0	6 to 0 0
Beet, Red.....	doz.	1	0	3	0	Parsnips per doz. bunches	0	6	0 to 0 0
Broccoli.....	bunch	0	9	1	6	Parsnips.....	doz.	0	9 to 1 0
Cabbage.....	doz.	1	0	1	6	Peas.....	quart	2	0 to 5 0
Capsicums.....	½	100	0	0	0	Potatoes.....	busbel	6	0 to 9 0
Carrots.....	bunch	0	6	0	0	Kidney.....	do.	0	0 to 0 0
Cauliflower.....	doz.	3	0	6	0	Round.....	do.	0	0 to 0 0
Celery.....	bundle	1	6	2	0	Radishes.....	doz. bunches	1	0 to 1 6
Colsworts.....	doz. bunches	2	6	4	0	Rhubarb.....	bundle	0	6 to 1 0
Cucumbers.....	each	0	6	1	6	Salsify.....	½	bundle	1 0 to 1 6
pickling.....	doz.	0	0	0	0	Savoy.....	doz.	2	0 to 3 0
Endive.....	doz.	2	0	0	0	Scorzonera.....	½	bundle	1 0 to 1 0
Fennel.....	bunch	0	3	0	0	Sea-kale.....	basket	1	0 to 2 0
Garlic.....	lb.	0	6	0	0	Shallots.....	lb.	0	3 to 0 6
Herbs.....	bunch	0	3	0	0	Spinach.....	busbel	2	0 to 9 0
Horseradish.....	bundle	3	0	4	0	Tomatoes.....	doz.	0	0 to 0 0
Leeks.....	bunch	0	2	0	0	Turnips.....	bunch	0	3 to 0 0
Lettuce.....	doz.	1	0	2	0	Vegetable Marrows.....	do.	0	0 to 0 0

POULTRY MARKET.—MAY 14.

OUR market tells of untoward weather in the past. The young poultry is not as forward as we expected and hoped. There are, however, indications of improvement, and we hail them gladly. Outrageous prices are neither good for senders nor sellers.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	6	0 to 6	6	0	Pheasants.....	0	0 to 0	0	0
Smaller ditto.....	6	0	6	6	Partridges.....	0	0	0	0
Chickens.....	4	0	4	6	Hares.....	0	0	0	0
Duckings.....	7	0	7	6	Rabbits.....	1	6	1	0
Guinea Fowls.....	3	6	4	0	Wild ditto.....	0	9	0	10
Duckings.....	4	0	4	6	Pigeons.....	0	9	0	10

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 22—28, 1873.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
22	TH	ASCENSION DAY. [of Linnean Society, 3 P.M. Alexandra Park Show. Anniversary Meeting SUNDAY AFTER ASCENSION. Anniversary Meeting of Royal Geographical Society, 1 P.M. Meeting of Society of Arts, 8 P.M.]	65.4	42.4	53.9	19	0	44	53	47	28	2	2	3	26	3	96
23	F		67.3	43.6	55.5	15	59	3	54	7	52	2	25	4	27	3	82
24	S		67.4	43.0	55.2	12	58	3	55	7	8	3	48	5	28	3	26
25	SUN		65.4	42.9	54.2	16	57	3	56	7	26	3	10	7	29	3	21
26	M		67.4	42.8	55.1	19	56	3	58	7	50	3	31	8	30	3	14
27	TU		66.5	44.7	55.6	22	55	3	59	7	20	4	44	9	1	3	8
28	W		68.1	44.4	56.2	15	54	3	0	8	1	5	46	10	2	3	0

From observations taken near London during forty-three years, the average day temperature of the week is 66.8°; and its night temperature 43.4°. The greatest heat was 91°, on the 25th, 1847; and the lowest cold 25°, on the 23rd and 24th, 1867. The greatest fall of rain was 0.97 inch.

ORNAMENTAL PLANTING.—No. 1.



HERE are few branches of horticulture of greater interest or importance than the embellishment of dressed grounds or natural scenery with trees and shrubs, and, I suppose I may venture to assert with equal truth, none which receives less attention or study, owing probably to the fact of its being rather a legitimate pursuit of the landscape gardener than the general practitioner. Without any pretension to the

laying down of arbitrary rules or canons of taste, it is my purpose in writing these papers to endeavour to show clearly how lawns and shrubberies are planted, giving the arrangements of borders, groups, clumps, and solitary specimens, and in doing this care will be exercised to keep as closely as possible to the explanation of practical details deduced from actual experience.

The subject is a wide one, and withal most interesting; and as one passes its most important heads in review, the materials suitable for the work press upon the mind in such profusion that it is no easy matter to make a selection from such a host of subjects "rich and rare" without passing over many things of importance. By selecting materials possessing strongly-marked characteristics, and by giving the details of each arrangement fully and clearly, it is hoped that these notes will prove useful, so far as written directions ever can be.

One important rule which cannot be too strongly impressed upon the minds of beginners is never to attempt too much in the first instance, always bearing in mind the important axiom that the most simple matter or trifling detail once well done is a principle mastered and a step gained.

Harmony, contrast, and repose are three most important principles to which we should try to give expression; graceful simplicity and artistic effect are not incompatible but are really inseparable, and always present in the most costly and elaborate works of art. The production of harmonious effect implies a just appreciation of the relative value of form with form, and of the various shades of colour; there must be no clashing even in contrast, which must please and gratify, rather than startle or astonish; every arrangement or scene, therefore, however distinct or varied in character from others in the same garden, should yet be sufficiently in keeping with them to form a connecting link of the grand whole.

In order to secure so desirable an end in what is inevitably a somewhat costly undertaking, it is of primary importance to make a careful survey of the surface of the land before laying it out, and to adapt the design to its natural formation so far as is practicable; thus, if the chief part of the surface has a general broad or flat expanse, or is, on the other hand, undulating and much broken, we should strive to impart, or rather retain, the tone or air of either style to the dressed grounds generally. It is true that a departure from this rule may frequently be seen in gardens of great extent, but it would be unwise,

as the result would be unsatisfactory, to venture upon a mixed style in such small places as these notes are intended for.

Ample variety of aspect may be imparted to all gardens without any violation of the purity of style which I advocate, and while avoiding all meaningless ornamentation we should strive for expression in every feature and object. It is in doing this that so many of the choicest plants and shrubs play such an important part: the common Yew may be so massed as to lend a charm—often undefined, but none the less powerful—to the brightest gayest triumph of Flora; the walk that sweeps past gay flower beds brilliant with summer beauty, may in its next curve lead us to the quiet repose of turf-clad banks bearing clustering masses of Yucca, or among the feathery tapering forms of Conifers, the silvery plumes of the Pampas Grass, or to some fine specimen tree or shrub. Thus fresh forms and colours present themselves in rich and varied beauty at every turn, and the importance of first measures in designing the contour of each portion of lawn or pathway becomes evident. Graceful sweeping curves or gentle undulations all constitute beauty. A walk that winds from an open lawn among masses of shrubs or under the spreading branches of lofty trees, seems to invite us to explore, and in planting we gladly avail ourselves of the numerous prominent positions which such curves afford to place our choicest specimens to the greatest advantage. Single fine specimens well placed are always much appreciated. Take, for example, the Wellingtonia that is planted upon the triangular space between the Rosery and Water Temples at the Crystal Palace, nothing could be better. It imparts variety and grace to the surrounding scene, of which the high-raised mound, crowned by the lofty arches of the Rosery, stands out so boldly that to the casual observer all subordinate objects apparently sink into comparative insignificance: yet the situation of this flourishing young tree is so singularly appropriate that it is, and must continue, an object of the greatest interest and importance. The chief reason for this is its central position—that is to say, it stands at a central point upon which three walks converge; and thus, although it is at the foot of the Rosery slope, and so close to the margin that it may be regarded rather as part of it than as a separate feature, yet it possesses in itself so much that is interesting, stately, and dignified as to attract great admiration for its striking individuality alone. That is the point, and the lesson which it teaches is precisely that which I wish to convey clearly to the reader—namely, that the best position for single specimens is wherever they attract attention as individuals without clashing with the surrounding objects, but rather contribute to their beauty.—EDWARD LUCKHURST.

CULTURE OF ROSES IN POTS.

THE most magnificent exhibition of Roses in pots ever seen in London was that held at South Kensington on Wednesday, May 7th. Fancy a Rose bush 5 feet in height and over 18 feet in circumference, furnished with healthy

foliage to the base, and covered with superb flowers, as was the case with that best of all Roses for pot-culture, Charles Lawson, in Mr. Turner's collection. Many of his other plants were quite as healthy and nearly equally well flowered, the largest proportion of them being Hybrid Perpetuals. Such specimens are far beyond the reach of ordinary growers, but they showed us what can be done with the queen of flowers as a pot plant. They are specially grown for exhibition, and they well deserved the highest honours that could be awarded them. The smaller specimens, which can be grown and flowered beautifully in 8-inch pots, are within the reach of the most modest owner of a greenhouse, and no greenhouse, however small, should be without a few pot Roses.

Roses are divided into two great sections, which may be subdivided into many more: First, the summer Roses, flowering in June and July; in this section are comprised the Moss, Provence, French or Gallica, Hybrids of Chinese and Bourbon Roses, &c. Second, autumnal Roses, flowering from June to November, or later if frost and snow do not prevent. The most important of this section are the Hybrid Perpetual and Tea Roses; nor can the Neisettes be omitted, as *Maréchal Niel* is amongst them; but for culture in small pots the Hybrid Perpetuals and Teas are decidedly the best. With a few of the best varieties of the above, and very little trouble or expense, fresh and fragrant Roses may be cut every month of the year. Roses grown in 8 or 9-inch pots are also more useful for ordinary decorative purposes, as they can be worked in well in the conservatory border or on a greenhouse stage. When well managed such plants also produce better flowers than large specimen plants.

As a pot plant the Rose is easily managed, and can be grown more satisfactorily in that way than planted out of doors, when soil or other circumstances do not favour vigorous development. In the garden under my charge it is discouraging work to cultivate the Rose out of doors; we are open to the east winds, we are under the influence of the impure atmosphere of the east end of London, and the soil is of the worst possible description—light gravelly stuff of no depth, with a dry gravel subsoil. Our only chance to obtain a good Rose in the open air is to plant Briars, using as much clayey loam as we can get to mix with the soil, and to bud our own. Some good flowers are obtained the first year from the bud, afterwards they rapidly deteriorate. From our pot Roses grown under glass flowers are being cut which would not suffer by comparison with the noted Roses of Cheshunt or Waltham. A number were grown this year without any forcing, except that a fire was put on in winter on a very few occasions to keep out the frost, and a succession of flowers has been obtained by pruning from November to February, Teas and Hybrid Perpetuals being the sorts grown. The earliest blooms opened about the third week in April, and on some of the latest the buds cannot as yet (May 13th) be discerned.

Some varieties seem to have a tendency to flower earlier than others. The first to flower (and I am now alluding to those pruned all at one time and subjected to the same treatment), was *H.P. Louisa Wood*, followed closely by *Lyonnais*, *Countess of Oxford*, *Madame Laurent*, *Monsieur Woolfield*, *Climbing Devonensis*, and, last to open, though the best of all, *Duke of Edinburgh* and *Maréchal Niel*. *Duke of Edinburgh* as a standard or half-standard is a splendid pot Rose; the buds are very brilliant.

As a pot plant the Rose is easily managed. I have it on the Briar, the Manetti, and on its own roots; the largest proportion are on the Manetti stock, and they seem to do well on it. Now is the time to purchase the new Roses which have been grafted on this stock, and can be sent out in good plants grown in 5-inch pots. If they are intended for pot-culture they should be shifted at once into 7-inch pots, and grown for a week or ten days in a greenhouse preparatory to being placed in a sheltered position out of doors; the plants will grow freely, and will furnish plenty of good eyes for budding on Briar stocks by the end of July. In September all the small shoots may be used for making cuttings, which will, if planted in small pots, root freely in a cold frame under a north wall. The Tea Roses strike out roots the soonest, but very few of the Hybrid Perpetuals fail. As soon as they are rooted pot them off singly in 60-sized pots, and place them in an airy greenhouse or pit; they will continue to grow all through the winter in mild weather, and by May each plant produces three or four flowers, and continues to do so during the summer months. Of course they must be shifted into larger pots.

To grow Roses well in pots the soil must be rich, to cause

them to make strong growth; use turfy loam of a clayey nature four parts, and one part of rotted stable manure, and if there is much clay in the loam some leaf mould should be added to it or a little sharp sand. They should be potted rather firmly, first placing plenty of potsherds in the bottom of the pot, and some fibry turf over them to prevent the potting material from mixing with the drainage. If the drainage is choked up the plants will not continue to thrive.

Potting may be performed at any season, but October is the month when the largest proportion of them should be shifted; those in large pots should have the ball well reduced, and the plants repotted in pots of the same size as those from which they were turned out. The smaller plants may be shifted into larger pots, or if the size be limited the roots may be reduced accordingly. At that season no harm will arise from reducing the roots to a large extent. Even if the plants are plunged out of doors during winter, the roots will continue to grow and the buds to swell whenever the weather is not too severe.—J. DOUGLAS.

THE SPRUCE FIR AND ITS FAILURE.

It is about thirty years since a sort of disease attacked this tree, and many succumbed, not, perhaps, just at the time, but in a few years afterwards. Though occasionally outliers have been raised, yet I do not remember of any one season in which tokens of ill health were so manifest as one spring about the time alluded to. I have never been an especial admirer of this tree, and latterly have become less so than before, but I am sorry we are likely to lose it as an ornamental tree, and more certainly as a useful one, for it is seldom we meet with it of any considerable size without showing signs of ill health, from which, when it once sets in, the tree never recovers unless such ill health is from some temporary local cause.

During the past winter we had here occasion to thin-out some plantations of mixed trees that were planted between thirty and forty years ago, and which had, of course, been thinned as necessary at intervals during that time. The plantation being of mixed trees, it is curious to note that but very few of the Spruce Firs are now left, and amongst those we cut the past winter very few were sound, while at the same time all the Scotch Firs retained their healthy appearance. Whether on the dry stony soil of the upland, or the stiff retentive loam bordering on the clay of the valleys, they seemed in every case likely to outlive their neighbours by many years. May I ask, How is this? for both were alike healthy and vigorous for a number of years—say twenty, after which the Spruce Firs on the outside of the plantation, on the windward side, showed signs of injury, while the hardy Scotch Firs retained their deep glaucous hue unimpaired, and have continued to do so until the present time, their neighbours dying-off one after the other, or, falling into ill health, they had to be cut down. It would then be discovered that decay had set in at the root, and if left alone, ere long they would have been laid on their side by some high wind. It will be said that the soil did not suit them, but why is it that the Spruce thrives so well for a certain period and then falls off? Here the growth of the latter tree exceeds that of the Scotch Fir for the first ten or twelve years, and there are no signs of disease, but in the countries to which it is indigenous we are told it far exceeds the Scotch Fir in size and longevity, which is certainly not the case at this place, for we have some tolerably healthy Scotch Firs that much exceed one hundred years of age, containing as many cubic feet of timber, and, though fully exposed on high ground, showing no further signs of decay than those of old age. That there is something at fault either in the soil or situation, or both, that prevents the Spruce from attaining the same age and dimensions is apparent, and I am inclined to think it is some atmospheric cause—some deficiency of moisture. That the tree will endure a large amount of moisture I am well aware, and in some of the northern districts it thrives very well.

I remember some years ago seeing the Spruce very extensively used in ornamenting the grounds at Dramlanrig Castle, and there it appeared to be in the most robust health, feathered down to the ground; and in conjunction with large fine bushes of the common Berberry, which were laden with their coral berries, it formed a very important feature of the place. The soil appeared to be suitable to the wild Heath, but grass and similar herbage formed the ground-covering, and, perhaps, one of the secrets of success was that the annual rainfall of the district was nearly 50 inches.

In such a situation it may be advisable to plant the Spruce,

yet unless the examples given be backed by the fact of trees in a like position also doing well for a number of years, I would not recommend this tree being planted, except to occupy a place for a few years as a nurse to something intended to succeed it. Under such circumstances it may be planted; but it would be well on the part of those who plant whether for shelter, ornament, or profit, to ponder well whether they ought not to plant something else instead, for it must be borne in mind that its failure is not confined to one place, nor its disease to any particular season. It has been going backwards, possibly before the time when its rapid falling away attracted general notice.

The question naturally arises, How does it happen that a tree that thrives well up to a certain point should so suddenly cease to do so, before it can fairly be assumed that it has exhausted the soil of the food which the latter contains? I do not think that lack of constitutional vigour can be the cause, and it is still more unlikely that the severe winters we have now and then can affect it, for a tree that withstands a Norwegian winter is not likely to succumb to an English one. I am more inclined to believe that our hot summer has some influence in the matter, but I merely venture this as an opinion, based on the fact of the tree appearing to thrive better in places having a more copious rainfall. If my memory be right, it thrives well at Alton Towers, in Staffordshire, and other places where we know rain is more abundant than with us.

Has any correspondent possessing good-sized specimens of the more choice Conifers noticed indications of their dying off in the same way as the Spruce has done? The nearest approach to it in affinity is the Himalayan Spruce, *Abies Morinda* or *Smithiana*, of which, as it has been introduced several years, there must be specimens about as large as the common Spruce when it succumbs in so many places. I am glad to say that amongst several we have here, 50 feet high or upwards, I only notice one that is not densely feathered to the ground with healthy foliage, and this one is in a very exposed place, where its foliage is likely to be discoloured by high winds. I do not assert that this Spruce will be exempt, and as a Conifer it is inferior in hearty to many others; but if it be found to succeed where its elder brother perishes, it will have a greater claim on the attention of planters, for it certainly must be admitted that the bad appearance so many plantations of Spruce Firs present at the present time has checked their future extension. I have no faith in remedial measures in the generality of cases where there is an extensive plantation. Artificial helps will enable a single tree or two to outlive the natural term in a place not suited to it, but where thousands of trees are planted it would be better to consider which amongst the many species we have is best suited to the spot, and plant that.

I imagine the sites suited to the requirements of the common Spruce Fir are becoming fewer and fewer, and that it would be well on the part of intending planters to ponder ere they commit themselves by adopting this tree to any great extent. On the other hand, the Scotch Fir, though not perhaps making such a nice specimen for our young friends to hang their Christmas ornaments on, has an unquestionable claim to our attention, in its old age almost equalling the Cedar of Lebanon. At this stage its timber far exceeds that of its neighbour, and if it could be had in quantity would compete with that from the Baltic.—J. ROBSON.

IBERIS GIBALTARICA.

WE have received from Mr. G. F. Wilson, of Weybridge Heath, a flower of *Iberis gibraltarica*, of the true blush colour, to which "I. A." alluded last week. It is undoubtedly identical with the plant figured in the "Botanical Magazine." The variety with pure white flowers, and which has the same habit as *Iberis gibraltarica*, may possibly be a seminal variety, but it is certainly an inferior one in point of size. If this should prove to be a white variety it ought to be called *Iberis gibraltarica alba*, while the rose-coloured form retains the original name of the species.

I HAVE a plant of *Iberis gibraltarica* with rosy-tinted flowers, which I have grown for many years, but I have never known it distinguished as *vera*, neither have I ever seen a white variety.—D. M.

PRIZES FOR MARKET GARDENERS. — At the Worcestershire Agricultural Society's Show to be held on August the 12th and

following days, three £10 and three £5 prizes are offered for the best market gardens of various sizes.

PRESERVING GARDEN SEEDS FROM MICE, RATS, BIRDS, &c.

I HAVE never heard of so many complaints as this season. Whole rows of Peas have been cleared out in a night, and small seeds, as of Cauliflower and Broccoli, have disappeared from the attacks of the smaller birds. In some cases where nets, from having been securely fixed, kept the birds away, the attacks of various flies have left the seed-bed like a desert. From what has been brought under my notice I should judge that the season has been a good one for seedsmen. Even among cottage gardeners, who pride themselves on a few rows of good Peas and Beans, some have been compelled to go a third time to the seed shop—no very pleasing thing to a labourer, as every extra outlay, though small, tells on the weekly wages.

At one time no one suffered more than myself. What with rats and pheasants it was next to waste time to sow Peas and Beans. Even when netted with string and wire netting a pheasant would find its way in at one end, and clear out the rows of Peas at leisure, as if knowing full well that if caught at his pilfering I should be obliged to let him off with impunity. For a number of years I have had no trouble at all with seeds in the ground, simply by colouring them with red lead before sowing them. I have frequently alluded to the subject, but it will bear repeating, as some keen amateur farmers have come and taken notice for themselves, and resolved to apply it to many of their seeds where birds are very plentiful. What surprised them, and has often surprised me, is the simple fact, that when seeds are thus leaded before sowing, and the ground patted down, it is rare that mouse, rat, or bird will make a hole to look for what is beneath. They seem to know there is something there that will not agree with them. For a quart of Peas slightly damped, as much of the red-lead powder as can be held between the points of the thumb and two fingers will colour the Peas well, if properly turned over and over with a stick. It is as well not to use the hand in sowing if there are wounds or cracks on the fingers, and in all cases the hands should be well washed afterwards. For small seeds, as Turnips, Broccoli, Lettuce, &c., a mere pinch is ample, and it is advisable not to lead any more than it is thought proper to sow. A mere pinch of Lettuce seed will go a long way when there is little chance of a seed being taken.

When the seedlings are 2 or 3 inches above ground the red lead to a certain extent loses its protective power. For the first time this year I found some Peas rooted-up by rats. In some few cases where the coating matter had fallen off, the rat had nibbled a portion of the centre of the pea, but in the generality of cases, after pulling or rooting the pea up, the swelled pea was left untouched. Altogether this was done to a trifling extent. I have seldom or never known a red-leaded seed touched until the plant came above ground. Then, of course, there were insects and other enemies to contend with, which greedily feed on the young shoots and leaves, one of the most voracious being the wood pigeon where at all numerous. The earliest Peas and a few later rows suffered considerably from them this season. They came as soon as the birds began to sing at early dawn, and were gone before many men were out of bed. A slight sprinkling of ashes and a little soot when the plants are damp makes them rather unsavoury to such visitors, and does no harm to the plants. Pieces of white paper tied to a suspended string act likewise as a deterrent. For small seedlings, as of Kale, Cabbages, Broccoli, &c., I found a sprinkling of ashes with a little soot in it, a good preservative against birds and different sorts of flies. Against Turnip and other flies a few small thin branches of spruce with their needle-like leaves are also a good protection. Years ago I protected early Turnips with hurdles placed over each little sowing about a foot from the ground, the hurdles having spruce branches thinly drawn through them. In such a case I have never found the fly intrude, and after the stout rough leaves become strong there is little more danger. Of two men whom I lately saw, one has lost all his young Coleworts; his neighbour who stuck a few spruce branches over his bed has not lost a plant.

The best-intentioned are apt to overlook some trifle that may be of importance. One of the farmers to whom I have alluded, thought it must be great labour to red-lead such a

lot of different Kales, Broccolis, &c., as he saw on one border, but really very little more trouble was involved than sowing them in the usual way. The ground was trodden and made fine on the surface by raking. For Peas I use a flat dish for colouring. For all these small Kale and Turnip seeds I use a small plate or saucer. When many kinds have to be sown we take from half a dozen to a dozen saucers, put into each as much seed as we wish to sow, mark out the ground it is to occupy—always too small with us—and put its appropriate tally with it. A man follows carrying one saucer with the red lead, emptying the next saucer he comes to in it, and thus one saucer for leading does for all the sorts, and for the season if deemed necessary. We generally finish by patting the seeds into the earth gently, and then covering with a mixture of fine soil and charred refuse, the latter helping to keep insects away from the young leaves.—R. F.

CRYSTAL PALACE FLOWER SHOW.

MAY 17TH.

SATURDAY last, the day of the Crystal Palace Flower Show, was cold and uninviting throughout the afternoon, though early in the forenoon there was warm sunshine accompanied by a keen wind. Upwards of 15,000 persons, however, visited the Palace, where there were sundry other special attractions besides the Flower Show, but of the latter alone it is our province to speak. The collections exhibited were not quite so numerous as usual, but still they were sufficiently so to constitute a large floral display, in point of general excellence quite on a par with the corresponding exhibitions in former years.

Stove and greenhouse plants always form the leading feature at this Show, and for these Mr. T. Baines, gardener to H. Micholls, Esq., Southgate, took the foremost place for twelve with a collection consisting, with one or two exceptions, of the specimens which he exhibited on the previous Wednesday at the Regent's Park. Indeed, most of the plants shown on Saturday last had already made their appearance there and at South Kensington, and have been noticed in previous reports. Mr. Baines again brought forward his splendid *Anthurium Scherzerianum*, *Azalea Iveryana*, *Erica ventricosa coccinea minor*, a large bush of *Erica Cavendishiana*, *Eriostemon*, *Franseria confertiflora* very fine, a splendid plant of *Hedera tulipifera*, and a fine example of *Boronia pinnata*. Mr. W. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, Rugeley, came second with a very large plant of *Pimelea spectabilis rosea* in fine bloom; *Chorozema Chaudlerii*, excellent; *Clerodendron Balfourii*, fine *Azalea*, *Heatha*, &c. The other successful exhibitors in this class were Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, and Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park.

In the nursery-men's class for nine plants Messrs. Jackson and Son, Kingston-on-Thames, took the lead with, among others, fine plants of *Acrophyllum venosum*, *Aphelxia macrantha* purpurea, and *Imantophyllum minimum*. Mr. W. Cutbush, of Barnet, came second, and Mr. Morse, Epau, third, the last-named having a very good example of *Medinilla magnifica*.

In the amateurs' class for nine Mr. Peed exhibited an excellent group, comprising a large and remarkably well-flowered *Epacris miniata* splendens, *Ixora coccinea*, *Erica Cavendishiana*, *Stephanotis floribunda*, large, well bloomed, but much tied-in; *Franseria calycina* very fine, and *Chorozema cordatum*. Mr. J. Ward, gardener to F. G. Wilkins, Esq., Leyton, had *Erica tricolor Wilsoni*, between 3½ and 4 feet in diameter; *Statice profusa*, some 5 feet through, and in fine bloom; well-grown specimens of *Genetylia Hookeriana* and *Boronia pinnata*, with *Clerodendron Balfourianum*, &c. Mr. Bain, gardener to J. Scott, Esq., Bickley Park, and Mr. J. Wheeler, gardener to J. Philpott, Esq., were the other prizetakers.

In the class for six fine-foliaged or variegated stove and greenhouse plants, Mr. Baines again took the first position, showing a splendidly-coloured plant of *Croton pictum*, grand *Sarracenia*, *Cordylindivia*, *Theophrasta imperialis* in beautiful condition, and *Dasythirion acrotrichum*. Mr. Williams, of Holloway, came second with a group consisting of noble examples of *Chamaerops humilis*, *Croton pictum*, *Cycas revoluta* 10 feet in diameter, *Gleichenia spelonca*, and *Dasythirion plumosum*. A remarkably fine specimen of *Alocasia metallica* was shown in the same class by Mr. Foreman, gardener to E. C. Nicholson, Esq., Herne Hill.

Heaths were shown in excellent condition, both as large and small specimens. The most conspicuous were *Cavendishiana*, *ventricosa magnifica* and *coccinea minor*, *tricolor elegans*, *tricolor Wilsoni*, and *depressa*. The chief prizetakers were Messrs. Jackson & Son, Ward, Peed, and J. Wheeler.

Azaleas for the most part were the same as shown at the exhibitions of the previous ten days. Mr. Turner, of Slough, had a very fine thirty in 8-inch pots. Among these the most conspicuous for their quality were *Monsieur Thibaut*, orange scarlet; *Comtesse de Flandre*, rose; *Baronne Osy*, semi-double,

scarlet; *Ferdinand Kegeljan*, salmon red; *Duc de Nassau*; *Etendard de Flandre*; *Roi d'Hollande*, and *James Veitch*. From Messrs. Jackson & Son, the only other exhibitors of thirty, came some of the above, though not so well grown, and *Venus* and *Grand Crimsan*, both beautifully flushed with magenta. In the other classes Mr. Turner, Messrs. Jackson, and Messrs. Lane among nurserymen, and Messrs. Roach, Chapman, and G. Wheeler, exhibited successfully, and some of the specimens were worthy of commendation.

Orchids were not so numerous as usual at this Show, but some very good specimens were shown, most of which had appeared on the previous Wednesday. Mr. Ward was first for fifteen, showing *Phalenopsis grandiflora* with three spikes of remarkably fine flowers, *Cypripedium Stonei*, *Odontoglossum Phale-nopsis*, *O. radiatum*, *O. hystrix*, &c.; whilst Mr. J. Wheeler and Mr. Peed exhibited creditable collections of six. In the nursery-men's class Mr. Williams stood first with the fine *Cypripedium* noticed last week, *Saccolabium retusum* with four racemes, *Phalaenopsis grandiflora*, and the beautiful *Cattleya Mendelii*.

Among miscellaneous subjects Mr. Noble, of Bagshot, sent a collection of pot plants of his beautiful *Clematises*, and another collection of the same flower came from Mr. W. Cutbush, of Barnet. Mr. Ware, of Tottenham, contributed a group of hardy plants for the flower garden, as well as cut blooms of *Fancy* and bedding *Pansies*; Messrs. Carter & Co., High Holborn, fine baskets of *Tricolor* and *Bronze Pelargoniums*, some new flowering *Zonals*, and a large group of *Ferns*, *Palms*, *Orchids*, and fine-foliaged plants of recent introduction; and Messrs. Downie, Laird, & Laing a charming and tastefully-arranged group of *Palms*, *Ferns*, *Caladiums*, and other fine-foliaged plants, together with *Blue King* bedding *Pansy*, a fine violet blue variety, which is found to bloom in Scotland even in the summer months, and *Perpetual Yellow*, another very useful variety. Mr. J. H. Ley, Lansdowne Road, Croydon, sent a good mixed group of *Palma*, *Ferna*, and fine-foliaged plants, taking a first-class certificate for *Lastrea denticulata*; and Mr. J. Wheeler, gardener to Capt. Christie, Westerham, thirty-six blooms of *Maréchal Niel* Rose, all cut from the same plant, and of such large size that a person at our elbow remarked they were "like Cabbages." Messrs. Lane & Son contributed a collection of pot *Roses*; Mr. Turner, *Tulips*; Messrs. Dobson, herbaceous *Calceolarias*; Miss Thomson, 4, Adelaide Road, Penge, charming button-hole bouquets of *Orchids*, *Roses*, *Ferns*, &c.; and Miss A. Hassard, Upper Norwood, had a similar exhibition, likewise one of table-decorations. From W. Thomson, Esq., Penge, came the Multiple Flower-vases, permitting of a number of variations of arrangement, but which could not be well understood without the aid of illustrative engravings. They are, nevertheless, very simple and effective, and if, as they no doubt are, inexpensive, we anticipate they will be extensively adopted by those who do not care to go to the expense of more elaborate contrivances.

Mr. Williams exhibited a number of new plants, including *Cattleya Mendelii*, *Dracena Fraseri* and splendens, *Maranta Mackayana*, and *Colax jugosus*; and Mr. Thomas Cotterall, Rhododendron Princess Louise with pure white flowers, for which he had a first-class certificate. Messrs. Dick Radclyffe & Co. sent rustic stands and Fern cases, and Mr. Voice, Horley, Surrey, samples of his ground vineries and pits, which appear to be very useful structures.

EXCELLENCE rather than quantity was the characteristic of the florists' flowers exhibited on Saturday. The season was not propitious, and the fact that owing to the Metropolitan Floral Society's arrangements being so uncertain that they were unable to offer prizes as last year for *Tulips* and *Pansies*, led to fewer of these flowers being exhibited than on late occasions. The *Roses* exhibited by Mr. Charles Turner have never been surpassed, and rarely, if ever, equalled. I have, perhaps, seen larger plants, but they were more leggy; these were thoroughly symmetrical, the foliage ample, and the flowers would, many of them, not have been out of place in a stand of cut blooms. A splendid plant of *Celine Forestier*, and another of *Souvenir de la Malmaison*, were, perhaps, the cream of the first ten; while his *Duke of Edinburgh*, *Marquise de Castellane*, and *Charles Lawan* were amongst the best of the twenty. In the class for twelve in smaller pots, *Edouard Morren*, *Marie Baumann*, *Madame Victor Verrier*, and *Maréchal Vaillant* were excessively beautiful; indeed, it almost seems invidious, where all were so beautiful, to select any as more so than others. Mr. Turner exhibited also a plant of the new *Rose*, *Madame Lacharme*, in much better condition than it has been previously shown; unlike most *Roses* of the class, which die bluish, this opens with a considerable suffusion of bluish, and then changes to white. Mr. Turner himself looks upon it favourably, and believes that it will prove to be a *Perpetual*; as shown to-day it was very much like *Souvenir de la Malmaison*. He also exhibited some seedling *Azaleas*, among which one *Apollo* seemed to be a desirable semi-double white with pink stripe, and received a first-class certificate, as it had previously done at Kensington.

In nothing has so great a change taken place as in the exhibition of Pelargoniums. When we recollect the grand collections which used to be staged by both amateurs and nurserymen, it is a great descent to see only one really good collection, that of Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, Essex. Pansies were exhibited by Messrs. Downie, Laird, and Laing, and by Mr. James; there were also some seedling Pelargoniums both in the Tricolor and Zonal class, but none of them seemed particularly well worthy of notice.—D., Deal.

ROYAL HORTICULTURAL SOCIETY.

MAY 21ST.

It is much to be regretted that the unfavourable character of the day must have prevented many from attending this meeting. The general display was remarkably good; many of the collections were worthy of the highest praise, and there was none that could have been condemned. We have from time to time had to note non-meritorious exhibits, but these seem to have now entirely disappeared. Heaths were excellent, Pelargoniums not so good by a long way as we have seen them, fine-foliaged plants well represented; but what alone made the Exhibition a notable one was the collection exhibited by Mr. T. Baines, gardener to H. Micholls, Esq., Southgate, for the Davis Memorial Prizes. For these twenty flowering stove or greenhouse plants in 6-inch pots, selected at any nursery, and afterwards securely labelled and sealed, are grown for two years by the competitor, and he has to exhibit eight of them at the second May meeting. On this occasion Mr. Baines, well known as he is for his astonishing achievements in the culture of this class of plants, fairly took everyone by surprise; his specimens were positively marvellous, clothed with foliage and flowers from bottom to top. His *Ixora* was a prodigy. Than his *Dipladenia* with over sixty flowers we have never seen a better, and all the rest were equally well grown. More in praise we cannot say, and therefore subjoin the dimensions of the plants:—*Aphelexis macrantha rosea*, 3 feet 6 inches through; 2 feet high. *Epacris Eclipse*, 4 feet 3 inches through; 3 feet 3 inches high. *Boronia pinnata*, 4 feet 6 inches through; 3 feet 3 inches high. *Ixora coccinea*, 4 feet 10 inches through; 3 feet 6 inches high. *Hedera tulipiferum*, 3 feet 3 inches through; 2 feet 10 inches high. *Dipladenia amabilis*, 3 feet 6 inches through; 3 feet high. *Bougainvillea glabra*, 3 feet 6 inches through; 3 feet 6 inches high. *Clerodendron Balfourianum*, 5 feet through; 4 inches high.

Class 1 was for nine Heaths. Here Messrs. Jackson & Son, Kingston-on-Thames, were first with dense bushy plants, averaging 4 feet in diameter, and in beautiful bloom. Conspicuous among them were *Erica favoides elegans*, *ventricosa magnifica*, very bright in colour, tricolor Wilsoni, and *ventricosa coccinea minor*. The others were *depressa*, *depressa multiflora*, tricolor *superba*, tricolor *speciosa*, and *Victoria*. Mr. Ward, gardener to F. G. Wilkins, Esq., took the second prize with magnificent plants of tricolor *elegans*, *Candolleana*, and *Wilsoni*, together with excellent specimens of *candolleana*, *eximia superba*, tricolor *impressa*, &c. The third place was taken by Mr. J. Wheeler, gardener to J. Phillpott, Esq., Stamford Hill, with small specimens. In the next class, for six, Mr. J. Ward had the first place for a very good group, Mr. J. Wheeler being second, and Mr. G. Wheeler third. For twelve the prizes went to Mr. Ward, Messrs. Jackson & Son, and Mr. G. Wheeler; those from the first two were remarkably neat well-grown plants about 2½ feet through.

There were three exhibitors of nine Show Pelargoniums in 8-inch pots. Mr. Ward, who was first, had large finely-bloomed specimens of *Alabama*, *Conqueror*, *Mdlle. Patti*, and *Patroness*, about 4 feet in diameter, together with others of less size; Mr. James was second, Messrs. Dobson third. In six Mr. Ward was also first with Rob Roy, fine, and very good examples of other varieties. Mr. James, gardener to W. F. Watson, Esq., came second with an evenly-grown lot of small plants; and Mr. Weir, gardener to Mrs. Hodgson, The Elms, Hampstead, was the third prizeman.

Only two lots of Fancies were shown by amateurs, Mr. James being first, and Mr. Weir second; and in the nurserymen's class Messrs. Dobson, Isleworth, were second.

For nine fine-foliaged plants the first position was taken by Mr. Baines, gardener to H. Micholls, Esq., Southgate, with two fine *Crotons*—*variegatum* and *pictum*, a noble specimen of *Theophrasta imperialis*, *Cordylina indivisa*, two fine *Sarracenias*, *Dasylirion acrotrichum*, *Yucca aloifolia variegata*, and *Rhopala corcovadensis*, very fine. Mr. Foreman, gardener to E. C. Nicholson, Esq., Herne Hill, was second, and Mr. Cole third; Mr. G. Wheeler and Mr. R. Watson likewise sent groups. In the nurserymen's class Mr. Williams, of Holloway, stood first with noble specimens of *Chamerops humilis*, *Croton pictum*, large and finely-coloured, *Cycas revoluta*, *Gleichenia sphegnacea*, *Phenicephorum seychellarium*, &c. The second position was taken by Mr. Burley, Hereford Road Nursery, Bayswater, who had also good specimens.

For six fine-foliaged plants Mr. Cole, gardener to J. S. Budgett,

Esq., Ealing Park, was first with a large plant of *Seaforthia elegans*, *Lantana borbonica*, and good specimens of *Chamerops humilis* and *Yucca aloifolia variegata*. The second place was taken by Mr. S. Strahan, gardener to P. Crowley, Esq., Waddon House, Croydon, with excellent specimens of *Dieffenbachia Bowmanni* and *Pandanus utilis*. The third prize went to Mr. Watson, gardener to T. H. Bryant, Esq., Surbiton Hill, who had, among others, a large specimen of *Cibotium princeps*. For twenty fine-foliaged plants the chief prizes went to Mr. Bull and Mr. Williams; Messrs. Rollisson, Mr. Aldons, Gloucester Road, Mr. Burley, and Mr. G. Wheeler also contributing collections. Mr. Bull's group comprised large plants of *Zalacca Wagneri*, *Ptychosperma regia*, *Encelpharctos villosus ampliatus*, together with handsome specimens of other Cycads; and among Mr. Williams's were the handsome *Croton undulatum*, *Dracena Cheloni*, and the graceful *Coccoloba Wallisi*.

Of *Rhododendrons* there were only two collections of nine coming from Mr. Rowe, The Rookery, Roehampton, and Mr. G. Wheeler, who respectively took first and third prizes.

The prizes for twelve hardy perennials in 12-inch pots only brought forward two collections; Mr. Parker, Exotic Nursery, Tooting, and Mr. Ware being respectively first and second. *Alyssum orientale*, rich yellow, *Anubria purpurea grandiflora*, and the white-flowered *Iberis corifolia* were conspicuous objects in Mr. Parker's group; while in Mr. Ware's there were beautiful masses of *Phlox Nelsoni* and *frondosa*.

Of cut specimens of hardy flowering trees and shrubs Mr. Earley, Valentines, Ilford, staged a very good collection. Mr. George, gardener to Miss Nicholson, Putney Heath, was second.

Among miscellaneous subjects Messrs. Veitch sent a collection of Japanese Maples. These were extremely beautiful, both in the colours and curiously-cut foliage. *Acer atro-purpureum*, dissectum, and *palatum roseum marginatum* were very striking. From the same firm came also a group of *Azaleas*, including many fine varieties. M. Thibaut, Grandis, and Charmer were very fine. For Madame Paul Deschryver, semi-double, almost double, intense bright rose, a first-class certificate was awarded. Messrs. Lane, Great Berkhamstead, sent a large collection of *Azaleas* and greenhouse *Rhododendrons*. Messrs. E. G. Henderson, St. John's Wood, contributed a number of seedling *Petunias* of an excellent strain, for which they had a commendation; also Bronze Pelargoniums *Admiral Inglefield* and *Northern Star*, with broad chocolate bands, each of which was awarded a first-class certificate. Messrs. Osborn, of Fulham, sent a small miscellaneous group; Messrs. Dobson, herbaceous *Calceolarias*; Mr. W. Paul, cut flowers of *Rhododendrons*, *Zonal Pelargoniums*, and *Roses*; Mr. Ware, *Fancy* and other *Pansies*; Mr. Ware, Miss F. Barr, and Mr. R. Barr, Tooting, collections of cut flowers of *Narcissi*, in competition for the prizes offered by Mrs. Lloyd Wynne and Messrs. Barr & Sugden. From J. Luscombe, Esq., Combe Royal, Kingsbridge, Devon, came cut flowers of *Rhododendrons* grown in the open air, and flowers of *Embothrium* from trees 18 feet high. A cultural commendation was awarded for each. Messrs. Mart & Co., 130, Oxford Street, exhibited *Bananas*, *Chinese Loquats*, fruit of *Passiflora quadrangularis*, and *Sugar canes* imported from Madeira. Mr. Denning, gardener to Lord Lonsborough, Northiton, contributed a choice collection of *Orchids*, including fine examples of *Masdevallia Harryana*, rare *Cattleyas*, *Oncidium altissimum* with seven fine spikes, and *Odontoglossum citrosimum roseum*, very fine. Mr. Richards, gardener to Baron Rothschild, Gunnersbury Park, sent a group of *Odontoglossum crispum*, and Mr. Woodford, gardener to the Duke of Abercorn, Eastwell Park, Kent, a fine specimen of *Cycas revoluta*, 8 feet in diameter, with a female flower. This received a cultural commendation. Several extra prizes were awarded, which will be found recorded in another page.

FRUIT COMMITTEE.—Alfred Smee, Esq., F.R.S., in the chair. Messrs. Watts & Son, of Northampton, again sent the Northampton Broccoli. Mr. R. Dean, Ealing, sent heads of the old Knight's Protecting Broccoli, cut from a market garden in the neighbourhood of Hounslow, to show that even at this late season this esteemed variety is as fine as any of the new varieties recently exhibited. This was a very true form of the Knight's Protecting, and the head was completely enclosed in the spirally-twisted leaves. Mr. T. Bray, the Gardens, Nynhead Court, Somerset, sent a bundle of very excellent Asparagus, to which a cultural commendation was awarded. Mr. A. Henderson, the Gardens, Thoresby Park, Notts, sent three Royal Ascot and three Favourite Melons. They were much admired as excellent specimens of cultivation, and a cultural commendation was awarded to them. Mr. William Marcham Wentworth, Staines, sent a basket of Black Hamburgh Grapes, and also a dish of the same from pot Vines, and these were so good as to receive a cultural commendation. A gentleman at Colchester sent fruit of an Apple called D'Arcy Spice, a variety of great excellence and high flavour, which may prove to be the Golden Russet.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. The subjects submitted to the Committee on this occasion were by no

means numerous, and to some of them we have already referred. Messrs. Veitch exhibited a grand specimen of *Odontoglossum vexillarium*, which we figured last week. This, however, had ten flowers, and it received a cultural commendation. The same firm had also first-class certificates for *Gloxinia* Mrs. Haines and Prince Leopold, the former splendid glowing magenta, scarlet in the throat, shading off to scarlet and rose; the latter carmine, suffused with magenta. *Anthurium crystallinum* with broad white-veined leaves also came from Messrs. Veitch, and will doubtless be heard of hereafter. Mr. J. Mill, gardener to Lord Rendlesham, Rendlesham Hall, Suffolk, sent fine specimens of *Masdevallia Harryana*, and had a cultural commendation, as did Mr. Denning for a remarkably fine specimen of *Utricularia montana* in his collection, and Mr. Strahan, gardener to P. Crowley, Esq., Croydon, for *Anthurium Scherzerianum*. Mr. May, gardener to J. S. Bockett, Esq., sent a very well-grown collection of Orchids, in which were *Cypripedium niveum* with fourteen flowers, and *Oncidium concolor*, which latter was certificated.

Mr. C. Noble, Bagshot, exhibited a number of new Clematises, all excellent, and of which the following were distinguished by first-class certificates—viz., Charles Noble, blue; Undine, double lilac, of the John Gould Veitch type; Mrs. Cholmondeley, bluish lilac; Elaine, double lilac blue; and May Queen, lilac edges with light bands. Messrs. Laue had a first-class certificate for Rose Madame George Schwartz, large and fine rose. A similar award was made to Mr. G. Smith, Edmonton, for scarlet *Geranium Scarlet Gem*, a large very well-shaped flower.

Messrs. Paul & Son, Cheshunt, sent several boxes of cut Roses, also their variegated Otaheite Orange; Mr. W. Paul, Tricolor *Pelargoniums*; Mr. Ware, a collection of hardy plants; and Mr. Dean, Ealing, Mauve Beauty Stock, an excellent pyramidal variety. After the Committee had risen, *Napoleona imperialis* in flower was sent in by Mr. Bull.

RAPID progress is being made with the preparations in the Victoria Park for the Royal Horticultural Society's Show in June next. The model garden, which has been skilfully laid out by Mr. Eyles, is nearly completed, and a large portion of the space for horticultural buildings and implements has been already applied for. The Committee, who find their office no sinecure, are working zealously upon the many details which an extensive undertaking of this character involves. They have made arrangements with Mr. W. Edgcombe Rendle for the supply of his patented glass pavilions for the Exhibition; as the pavilions are waterproof, and are elegant in appearance, they will do excellently well for the reception of pictures, art treasures, musical instruments, stationery, jewellery, sewing machines, fancy goods, &c. A limited space will be available for exhibitors. Arrangements can be made for erecting pavilions of any design for special purposes. Lord Chelsea, M.P., who has become one of the patrons of the Exhibition, has promised to aid in securing the presence of His Royal Highness the Prince of Wales, at the opening ceremony.—(*Bath Express and County Herald*.)

MRS. PINCE GRAPE v. LADY DOWNE'S GRAPE.

I was glad in last week's number (page 393), to see Mr. Pearson's opinion of Mrs. Pince's Muscat was so good. It quite coincides with my own. In fact, so much do I think of it and so little of Lady Downe's after a trial of them, both growing side by side in the same house and fruiting for three years—I say so much do I prefer it to Lady Downe's, that I have pulled up all the latter and made the house entirely Mrs. Pince. I may also state that my friends who have tasted both at my house, are of the same opinion as myself. With me Mrs. Pince sets well, the bunches and berries are large, and the flavour delicious. Whilst writing on Grapes I may mention another new Grape, the Muscat Champion, whose only fault, if fault it be, is that it is not black but a dark red; I consider it the finest-flavoured Grape that I have. I submitted a bunch of it a short time since to the Editors of our Journal, who pronounced it to be "good, very good." I know it has a bad name, but soil makes a difference in fruit as well as flowers, and it may be that my soil is suited for it, as also Mrs. Pince. The Champion is with me early, the berries very large, with thin skin and much pulp, with few stones, sometimes only one. My advice is, Try it.—HARRISON WEBB, *Weirleigh, Kent*.

SEVERE FROST.

ONE of those disastrous May frosts, to which vegetation in this country is subject, occurred on the morning of Tuesday last, the 20th. At Chiswick the thermometer registered 22°, or 10° of frost. The result there is that the Strawberry blossoms are entirely destroyed, the pistils being perfectly black. The Apple blossom is also very seriously injured, though not en-

tirely destroyed, and Potatoes are black to the surface of the ground. It is curious to observe in some of the rows of Potatoes one or two plants quite green and untouched, while all the others have suffered, and in some cases the shoots from the same set have some destroyed and some quite safe. At Ealing the temperature was 24°, and there Roses and Planes have been severely hurt, and the young buds of Peaches and Nectarines in the nurseries are quite destroyed. At the Cheshunt nurseries Mr. George Paul informs us the Roses have suffered severely; the same is the case with Mr. Keynes at Salisbury; and both Mr. Standish, of Ascot, and Mr. Noble, of Sunningdale, inform us that the Rhododendrons have suffered very severely. No doubt we shall hear of serious damage having been sustained in many other parts.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

THE April meeting of the Society was held on the 7th of April, at Burlington House, H. T. Stainton, Esq., occupying the chair in the absence of the President, owing to his recent severe indisposition.

Mr. Champion pointed out the distinctions between *Tribolium testaceum* and *confusum*, and between *Ptinus testaceus* and *fur*, small domestic Beetles, which had been confused in collections.

Mr. Verrale exhibited specimens of several new British species of two-winged Flies belonging to the families *Asilidae* and *Syrphidae*, not hitherto recognised as natives of this country, including *Laphria flava*, *Linn.*; *Syrphus annulatus*, *Zett.*; *S. nigricornis*, &c.

Mr. McLachlan stated that he had been informed by Lord Walsingham, that he had observed that Dragon Flies in California and Texas were occasionally preyed upon by other large predaceous insects (evidently some species of *Asilus*), which seized them whilst flying through the air. Hitherto it had been supposed that the Dragon Flies were free from the attacks of other insects.

Mr. F. Smith made some remarks upon a field Bug, of the genus *Pentaloma*, sent from Calcutta by Mr. Rothney, found in great numbers on the bark of trees, with which it is so entirely assimilated in its colours as to be scarcely visible. Mr. F. Bates suggested that this mimicry had for its object the safety of the insects from the attacks of lizards.

A memoir was read by Major F. J. Parry upon seven new exotic species of *Lucanidae*, including notes on the synonymy of the species of *Lissotes*, *Figulus*, and *Nigidias*. Mr. F. Bates also communicated descriptions of new genera and species of *Tenebrionidae* from Australia, New Caledonia, and Norfolk Island. Mr. Albert Müller read some notes on the habits of Gall Flies (*Cynipidae*), contained in a letter from Mr. H. F. Bassett, of Waterbury, U.S.

THE May meeting of this Society was held on the 5th inst., H. T. Stainton, Esq., Vice-President, in the chair, in the absence of the President from continued illness.

Mr. Higgins exhibited a fine specimen of *Langia zeuzeroïdes* (one of the *Sphingidae*), bred by Major Buckley, from the Himalayas. He also exhibited a female specimen, the first that he had ever seen, of *Goliathus albognatha*.

Mr. McLachlan exhibited a coloured plate of Butterflies from Turkistan. This he had been requested to show to English entomologists as a sample of the manner in which the forthcoming work on the natural history of Turkistan (to be published at the expense of the Government of Turkistan), is intended to be illustrated. The extensive entomological collections from that Government had been chiefly made by M. Alexis Tedtschenko, in various expeditions during the years 1869-71, and were being gradually worked-out by various entomologists, each order being submitted to some one who had made it an object of special study. The work is to be published in the Russian language, with Latin diagnostic descriptions of the new species.

Mr. Bates pointed in the plate to a figure of *Cocandica*, a variety of *Colias Nastes*, an insect belonging to Lapland, and noticed as an interesting fact that many species of insects belonging to Arctic regions were found also in mountainous districts much farther south, though not in the intervening plains. He mentioned also *Colias Palæna*, which was found near the snow-line in the Alps, and in Lapland.

Mr. Albert Müller said that he felt much interested in the remarks offered by Mr. Bates, as they confirmed his own conclusions concerning the very close connection, or perhaps even identity, between the Arctic and the Alpine insect-faunas. He referred to one remarkable instance—namely, to the genus *Parussius*, and in particular to *P. Apollo*, which occurred in most parts of northern Europe and Asia; but which in Central Europe—i.e., in Switzerland, was confined to the Alps and the opposite Jurassian range, carefully avoiding the intervening alluvial plains, which in the glacial period had been covered by the glaciers of the Rhone, the Reuss, the Rhine, and minor tributaries. He added, that if the actual stations of the species

were mapped, they would all be found to exist outside, but along the moraines left by the ancient glaciers; and that the same was the case with Delius and Mnemosyne.

Mr. Albert Müller was desirous of making some inquiry concerning the literary remains of an entomologist. It was mentioned by Markus Lutz, of Basle, in his "Moderne Biographie," Lichtenstiegl, 1826, pp. 39-40, that Johann Samuel Clemens, a native of Chambéry, in Savoy, was a clergyman in the Val d'Illies (Lower Valais), and that he was a learned naturalist. He is said to have formed a library of eight thousand volumes, an herbarium, a collection of minerals and insects of the country, and is reported to have committed to paper many good observations concerning the natural history of the Valais, none of which seem to have been published. He is said to have died in 1812. Mr. Müller said that he would be thankful to any Italian, French, or Swiss entomologist who might be able to give information concerning the manuscripts of this divine, either by letter to himself or through any entomological publication.

Mr. Stainton exhibited a "pseudo-cocoon" which had been sent to him by Mr. A. H. Swinton, stating that he had found it in a crevice of a brick wall in the mortar. It was of such a hard texture that it could not possibly be penetrated by a pin. Mr. McLachlan thought that the cocoon was that of *Cerura vinula*, slightly altered in texture, because the larva had to fasten it to a wall instead of a tree trunk.

Dr. Sharp communicated a paper on "The Staphylinidæ of Japan," principally from the collections of Mr. George Lewis.

A paper was read entitled "Notes on the Ephemeridæ, by Dr. H. A. Hagen, compiled by the Rev. A. E. Eaton, M.A."

THE DOUBLE ROSE-LEAVED BRAMBLE.

PERMIT me again to trespass upon your space, and to inquire after another old plant figured in the "Botanical Magazine." It is *Rubus roseifolius* β *coronarius*, a very handsome double-flowering white Bramble, with flowers as large as a Rose. It is said to have come from Prince of Wales's Island in the East Indies. Can any of your correspondents inform me if this fine shrub is still in existence in the country?—R. A.

SALES OF PLANTS.—Mr. Stevens sold on the 8th inst. 350 lots of Orchids. The gross sum bid for them was more than £500. *Masdevallia Lindeni* sold for £10 10s.; *M. trochilus* for £11; and *Odontoglossum vexillarium var. coccineum* for £7. At other sales on the 9th and 12th *Oncidium splendidum* sold for £7 15s.; a *Cannellia alba pleno*, 8 feet high, fetched £7 10s.; *Cycas revoluta* for £11 11s.; and a *Dracæna lineata* £7 10s.

THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 4.

A REVEREND author, who has written much upon entomology and other sections of zoology, has in one of his works referred to some butterflies that he considered were friends to the gardener, though most of them, he added, were neither friends nor foes, but neutrals. I must acknowledge that at first I failed to see how any butterflies could be deemed, in a practical sense, friends to the garden, though they do, in their winged condition, impart pleasure by their lively motions and gay colours. Possibly, I thought, this entomologist has formed the opinion that the species so prolific in most seasons upon Cabbages, Cauliflowers, and kindred plants, do good by eating up leaves that are decayed or superfluous, and thus reduce the labours of the horticulturist; or these larvæ might be useful by imposing a limit upon the cultivation of Brassicaceous plants, to which, otherwise, too large a space might be appropriated by some to the exclusion of plants as desirable. The fact was, however, that the praise awarded to certain species of butterflies was for a reason few would conjecture—namely, because their larvæ helped to destroy garden weeds. The example given of the Nettle-consuming larvæ of some of the *Vanessæ*, as, for instance, *V. Io* and *Urticæ*, seems particularly unfortunate, for it is rarely these larvæ are found except in clusters, feeding upon Nettles growing in patches upon sheltered banks. The female butterflies do not resort to gardens for the purpose of depositing eggs on any scattered plants which may be growing there, but simply to sip honey. No gardener who is properly attentive to his ground would ever allow Nettles, of all weeds which intrude, ever to become so numerous as to require the agency of larvæ to impair their vitality. But I have noticed that even where the spiny larvæ of the gaudy *Vanessæ* have occurred in colonies upon Nettles, the plants seem scarcely any the worse for it, and soon throw out new leaves which replace those that have been devoured.

Any way, the gardener's benefits from butterflies in this direction are almost microscopical. Nor do I think that a better case can be made out with regard to some of the grass-eating larvæ, as, for instance, that of the Speckled Wood (*Pyrarga ægeria*), for though the author already referred to cites the Couch-grass (*Triticum repens*) as the food plant of the species, the larvæ feed upon various species of grass, as also do those of the Grayling (*Satyrus semele*), which have been sometimes found upon the pest of many gardens. But neither of these species occurs in sufficient abundance, nor in the localities, to keep down the extension of the Couch-grass.

It is rather singular, however, that in a book dealing with the friends and foes of the horticulturist no mention is made of Dragon-flies, and yet these are among the most predaceous of insects, and in certain gardens by no means unfrequent visitors. Individuals of the larger species are to be seen on the wing a long distance from the pool or stream where they were bred, and the number of insects one specimen will destroy in the course of a day is considerable. Many years ago an observer noted the eagerness with which a large Dragon-fly seized upon a Cabbage butterfly, and, having torn off the wings, proceeded to devour the body of its captive. Even the smaller and slighter species are as destructive in their way, though they seldom fly far from a brook or pond, and seize upon the Caddis-flies (*Phryganæ*) and other species which have been aquatic in their preparatory states, or are attracted to the water by some cause. Hence a friend of ours argues that it is an advantage to have an artificial pond or streamlet in or near a garden, because a moiety of the insects bred in gardens are sure to fly towards the water, and be drowned or devoured there; and he might have added that some pleasure is derived from the sight of the elegant motions of the Dragon-flies and May-flies that are likely to be produced under such circumstances. Years ago Dragon-flies were much more common about our market gardens near London than they have been of late, but an impetus to their increase will probably be given by the rains of last winter, which have replenished many ponds and ditches long dry. No one would now think of going out insect-hunting in the district of South Belgravia, yet I remember that about thirty years since, much of the land now covered by streets and squares was garden ground, Dragon-flies careered there on the wing, and other aquatic species were developed in the little creeks which intersected the land and flowed into the Thames.

We have often heard the question put, half in jest, half in earnest, "Why are these insects called Dragon-flies?" Assuredly they are in no way connected with the "George and the Dragon" of mythic English history, though as the general foes of other insects, these flies might be regarded as akin in disposition to the fabled dragons. We have said they are the enemies of other species, but more than that, they attack and eat their own relatives, and various examples of this cannibal propensity have been given. As to the name, however, it is exceedingly probable, we think, that they were first of all called Dragoon-flies by some one who compared them in their rapid and predaceous excursions to the "bold dragoons" of former days, beside whom their modern representatives, though duly booted and spurred, appear very pacific individuals indeed. Dragoon-flies might easily be corrupted into dragon-flies. "Horse-stingers" is a name commonly applied to the larger Dragon-flies throughout the country, and they are spoken of as objects of dislike, rather unreasonably. Sting they certainly do not, though armed with jaws most effective for the purpose of biting or of dividing their prey. I have watched their evolutions repeatedly, but have never observed that they are in the least disposed to attack man or any of the larger animals. They are exceedingly fearless, and I have seen such species as *C. annulatus* and *C. ænea* pass close to individuals which happened to come in their way as they were swooping after insects, and they will even strike against a by-passer, but certainly will not attack him unless he takes the offensive. But if you knock down one of them with a handkerchief, you will find on taking it up that it does not fail to attempt to seize its enemy, even if he be of human form. No object could be conceived of why these flies should attack horses, cattle, or other quadrupeds in meadows, though they may touch them by accident. Rennie was, I believe, the first to point out that Dragon-flies, like the fly-catchers and certain other birds, have their particular stations, to which they generally return after one of their hawking flights, carrying back the capture, that they may eat it at their ease. The enormous eyes with which these insects are furnished by

Nature give them every facility for seeing, just as does their celerity of wing for securing their prey.

Our most notable British species of this group of the Neuroptera, such as the Large-winged Dragon-fly (*C. annulatus*) and the Many-spotted (*Eshna maculatisima*), are mostly seen flying solitarily, or, at least, not more than two or three are observable about the same locality. These are from their size splendid objects in the sunshine, but when killed and preserved for their cabinet much of their beauty disappears, even with



Larva of Dragon-fly, and imago emerging.

the most careful stuffing. These have long bodies; the Libellulas* proper, which are more common, have shorter bodies, and they are less rapid in their motions. The abundant species known as *L. depressa* has a broad abdomen, bluish in the male, yellow in the female insect, the latter being rather less in size than her partner, but quite as ferociously inclined. Another pretty species not uncommon in many districts is *L. quadrimaculata*, distinguished by its four-spotted wings, and which sometimes quits the vicinity of streams to fly among the fields and gardens. To some of the species of Dragon-fly the name "demoiselle" has been given by the French in admiration of their graceful movements, and Latin names have been used similarly expressive, such as *C. virgo*, *A. sponsa*, and *puella*. These "damsels" are by no means as amiable as the poetic fancy would make them out to be, and they are, many of them, rapacious in the larval stage. In the aquarium some of the smaller larvæ of the genus *Agrion* live seemingly without preying on other insects, feeding either upon the leaves of aquatic plants, or upon living creatures too small to be discernible.

Though the life of Dragon-flies in their imago or mature condition only lasts a few weeks, or a month or two at the most, the larval state must be more than a year in duration in some species, and the pupal some months, when the insect is as capable of moving about as before, though eating little, or, perhaps, not at all, and exhibiting the rudiments of the wings which are shortly to transport it through the air. The peculiarities of the "aquat" larvæ of the Libellulæ have been often described in entomological and popular books. In some species there exists a curious apparatus at the tail which serves both for locomotion and respiration. Like fishes, they oxidise themselves by means of the air contained in the water, this being drawn into the abdomen and thence into the digestive organs. The pumping apparatus can be opened or shut at the pleasure of the insect, and it has a horny edging surrounded with hairs. The jet of water driven out by the larva propels it through the water by a succession of jerks, though it can also creep in a cautious manner, and generally does this when in pursuit of its prey, which would be startled, and possibly escape, if it were approached more rapidly. The distance to which a Dragon-fly larva can throw a jet of water has been ascertained by curious individuals, and in this way:—

A coloured liquid is passed down cautiously near the tail by a tube while the larva is in clear water; when it has drawn in *quant. suff.* the tube is withdrawn, and shortly after the stream of fluid comes forth, and is perceivable in the colourless water. Only sometimes the creature won't pump just at the right moment! In addition to the singular mode of respiration, a marked peculiarity of structure is found in the head of the larger Dragon-fly larvæ, which is provided with a mask composed of plates, which can be widened or thrust out, and the edges of which are provided with spines, or what might almost be called tusks. As Kirby remarks, after supposing how a human being would appear if he had such an apparatus attached to his face, "you will admit that your visage would present an appearance not very engaging while concealed by such a mask." "But," he adds, "it would strike still more awe into the spectators were they to see you first open the two upper jaw-plates, which would project from each temple like the blinders of a horse; and next, having by means of the joint at your chin let down the whole apparatus, and uncovered your face, employ them in seizing any food that presented itself, and conveying it to your mouth. Yet this procedure is adopted by the larva of the Dragon-fly. While the mask is at rest, it applies close to, and covers the face. When the insects would make use of it they unfold it like an arm, catch the prey, at which they aim by means of the mandible-like plates, and then refold it so as to hold the prey in a convenient position for the operation of the two pairs of jaws."

These larvæ delight to conceal themselves in the mud of ponds, out of which they emerge upon their victims; but, in spite of their rapacity, they are themselves seized upon and devoured by such beetles as the Dytisci and Ilythii, as I have observed in an aquarium. Even the stickleback, if particularly hungry, will dart at them, and succeed in maiming them.



Nepa cinerea (Water-scorpion.)



Notonecta glauca (Water-boatman.)

The more elegant and less warlike larvæ of the Agrions are greedily devoured by other insects, especially the Water-scorpions (*Nepæ*) and the Water-boatman (*Notonecta glauca*). It is interesting in an aquarium to notice how insidiously an individual of the former kind will steal along a stem of a water plant, with expanded pincers, until he encloses in a fatal embrace some unfortunate larva that was quite unaware of the approaching danger.—J. R. S. C.

THE CHERRY.

Is the Polstead Cherry the parent of our cultivated varieties? Why was the variety May Duke so called?—ANNIE.

[The Cherry was introduced to England by the Romans. Pliny says, "The Cherry did not exist in Italy before the period of the victory gained over Mithridates by L. Lucullus, in the year of the City 680. He was the first to introduce this tree from Pontus, and now in the course of one hundred and twenty years, it has travelled beyond the ocean, and arrived in Britannia even."

The Polstead Cherry, so called because grown in large quantities in a parish of that name in Suffolk, bordering on Essex, is the wild variety usually known as the Merry. Dr. Hogg in his "Vegetable Kingdom" observes that "The Cherries cultivated in gardens and orchards have originated from two distinct species. Those which are called 'Hearts' and 'Bigarreaux' are varieties of *Cerasus avium*, known by the names of Merry, Mazzard, Corone, and Gean; and the Dukes, Morellos,

* We are indebted to Messrs. Cassell for this and the other illustrations to this paper.

and Kentish are varieties of *C. vulgaris*. Both are found wild in the woods of Britain."

If we refer to our older catalogues of Cherries we find three varieties, the May, the Duke, and the Arch-Duke. The same catalogues say that the first was so called because it ripened in that month. If so, the ripening was not in this country, for no Cherry that we know has ever ripened here so early unless it was forced. We rather think that the name "May Duke," and its contraction "Duke," and its exaggeration "Arch-Duke," are one and all derived from *Medoc*, a district in the Gironde, from which it was introduced here, and its name, as usual, corrupted by our old gardeners, just as they corrupted Corinth into Currants, and Walnuts from Gaul-nuts, and many others. —Ems.]

AURICULAS IN LANCASHIRE.

I HAVE the pleasure of sending you the prize list of the National Auricula Society's Show, held at Manchester in connection with the Botanical Society's Show, April 29th.

In the opinion of all the growers present, the exhibition was a thorough success. It was unusually well supported by the public, and the many questions put to us by visitors to whom the fair flower had been known by little more than its pretty name, showed that a deeply interesting surprise had been afforded them. There were more plants in bloom than might have been expected at such a period in a very late ungentle spring. Our northern March had little of "the lamb" about it, and April came with a cold white face, never for long lit-up with the sunny smiles and tears of April showers. However, the Auricula blooms on the 29th were fine in condition, character, and size, and it will be seen by the names of the winning varieties that the good old favourites and the good new flowers were brought forward.

The absence of the later bloomers, such as Lancashire Hero, Earl Grosvenor, Richard Heady, &c., was owing to the hard times the Auricula has had to contend against this year. I did not see Lancashire Hero anywhere, except the one plant at the head of its class. My friend, "D., Deal," speaks of having a pure pale green-edged bloom of this variety. It is curious that the very same thing has occurred upon one of my Heroes this year, and further that I have had a similar sport to a very pale green tint, upon a plant of Lovely Ann. This last has been constant for two or three years, and there is a plant at Sheffield of the same variety which has conducted itself with like eccentricity. Smiling Beauty has been perfection with me on several of the plants. I do not know a white edge (my favourite class) to surpass it. I had two very correct trusses of Taylor's Glory, on one of which six pips measured 1½ inch across; but though Glory's paste is of the softest and whitest, it is not so circular as in Smiling Beauty. George Lightbody and Charles Brown are a pair of magnificent Greys, and are fully appreciated. There are two green edges, Prince of Greens and George Lightbody, both raised by Mr. Traill. There are not many plants of either in existence yet. The former was much noticed at the Show for its many good points, particularly the richness of the vivid dark green edge, the quality and proportions of the paste, and the circularity and perfect flatness of the flower. Its weak point is a pale eye. Traill's George Lightbody is a flower that was highly esteemed by the eminent grower whose name it bears. I bloomed the late Mr. Lightbody's own plant, but it was only a small one, giving two pips of great promise; the edge is a broad pure rich green colour, nearly black, and in fine proportions. Lightbody's 125 is a seedling of Maria, and in the way of Lady Dumaresque, but without the irregularities in form which the latter, one of the same parentage, can exhibit. A rich bright grey edge of Campbell's, called Confidence, is worthy of its name, and this veteran raiser has this season sent me a box of pips of fresh seedlings, which are a goodly sight. A friend in Sheffield also sends me some, and there are several seedlings among them, quite of the George Lightbody class, which is saying much. More I may say of them at another time.—F. D. HORNER, *Kirkby Malzeard, Ripon*.

NATIONAL AURICULA SHOW.—PRIZE LIST.

Pans of six dissimilar varieties, one at least in each of the classes.—1st, Robert Lord, Esq., Todmorden, with Col. Taylor, George Lightbody, Smiling Beauty, Pizarro, Charles Brown, and True Briton. 2nd, Rev. F. D. Horner, Kirkby Malzeard, Ripon, with Prince of Greens (Traill), George Lightbody, Smiling Beauty, Garibaldi (Pohlman), Imperator, and Ne-Plus-Ultra (Fletcher). 3rd, John Rowland, Esq., Prestwich, with Prince of Greens, Privateer, Bright Venus, Lord Primate, Prince of Wales, and Alma.

Pans of four dissimilar varieties, one of each class.—1st, Abraham Barker, Esq., Todmorden, with Col. Taylor, Privateer, Bright Venus, and Mary Gray. 2nd, Dr. Foster, Todmorden, with Imperator, Complete, Taylor's Glory, and Pizarro.

Green Edges.—Premium, Robert Lord, Esq., Prince of Wales. 1st, Dr. Foster, Booth's Freedom. 2nd, R. Lord, Esq., Lady

Wilbraham. 3rd, R. Lord, Esq., Col. Taylor. 4th, R. Lord, Esq., Imperator. 5th, Rev. F. D. Horner, Prince of Greens. 6th, Rev. F. D. Horner, Page's Champion. 7th, Clement Roys, Esq., Lady Blucher. 8th, Rev. F. D. Horner, Traill's Rev. G. Jeans.

Grey Edges.—Premium, R. Lord, Esq., Lancashire Hero. 1st, Clement Roys, Esq., Conqueror of Europe. 2nd, R. Lord, Esq., George Lightbody. 3rd, Rev. F. D. Horner, Robert Traill. 4th, Rev. F. D. Horner, Charles Brown. 5th, Rev. F. D. Horner, May Morning. 6th, Rev. F. D. Horner, Apollo (Hudson's). 7th, Dr. Foster, Charles Brown. 8th, John Rowland, Esq., Lovely Ann.

White Edges.—Premium, Rev. F. D. Horner, Smiling Beauty. 1st, Rev. F. D. Horner, Catharina. 2nd, R. Lord, Esq., Bright Venus. 3rd, Rev. F. D. Horner, Taylor's Favourite. 4th, Rev. F. D. Horner, Lightbody's 125. 5th, Rev. F. D. Horner, Taylor's Glory. 6th, John Rowland, Esq., Lady Jane Grey. 7th, Rev. F. D. Horner, Ashworth's Regular. 8th, Rev. F. D. Horner, Ne-Plus-Ultra (Smith).

Sels.—Premium, Rev. F. D. Horner, Mrs. Sturrock. 1st, Rev. F. D. Horner, Spalding's Metropolitan. 2nd, Rev. F. D. Horner, Meteor Flag. 3rd, Rev. F. D. Horner, Pizarro. 4th, Abraham Barker, Esq., Lord Lorne (Campbell). 5th, Abraham Barker, Esq., Lord Lee. 6th, Rev. F. D. Horner, Lord Clyde. 7th, Robert Lord, Esq., Jupiter. 8th, Rev. F. D. Horner, Redman's Metropolitan.

ALEXANDRA PALACE.—The opening of the Alexandra Palace and Park is on Saturday next, the 24th inst. The natural beauty of the Alexandra Park, heightened as it is by judicious and tasteful planting, would alone suffice to attract visitors, and the extent of the grounds (which embrace 220 acres) renders them a valuable addition to the existing lungs of London. The Palace, which crowns the summit of Muswell Hill, erected by Messrs. Kelk & Lucas from the designs of Messrs. Meeson & Johnson, architects, is an exceedingly elegant and substantial structure, its graceful dome being a striking feature in the northern suburban landscape. On the opening day there will be a grand international flower show, at which £1200 will be given in prizes; and at 3 p.m. a grand vocal and instrumental concert will take place in the centre transept, under the direction of Sir Michael Costa.

THYRSACANTHUS RUTILANS.

THAN this no plant has been more appropriately named—its flowers are in thyrses, and its leaves are glossy. It is a native of Central America, and introduced into this country in 1851. Coloured portraits of its flowers are in the "Botanical Magazine," "Paxton's Flower Garden," and in Thompson's "Gardener's Assistant," but the only detail of its cultivation is in the *Gardeners' Chronicle* nearly twenty years ago.*

In the "Botanical Magazine," where the plant is figured under the name of *Thyrsacanthus Schomburgkianus*, it is stated that it was discovered by C. S. Parker, Esq., in British Guiana, where Sir Robert Schomburgk afterwards detected it, and that subsequently it had been found in New Grenada at an elevation of 4000 feet above the sea level. As a stove plant it is one of the most useful for winter-flowering. It is of vigorous growth, and has broadly lanceolate, nearly sessile deep green leaves. The flower-stems are from 1 to 2 feet long, gracefully drooping, and bearing, in opposite pairs, numerous, rich crimson, tubular flowers about 2 inches long, which are produced in long succession.

As regards the cultivation of this plant "ALPHA," in the *Gardeners' Chronicle*, gave some years ago the following instructions:—

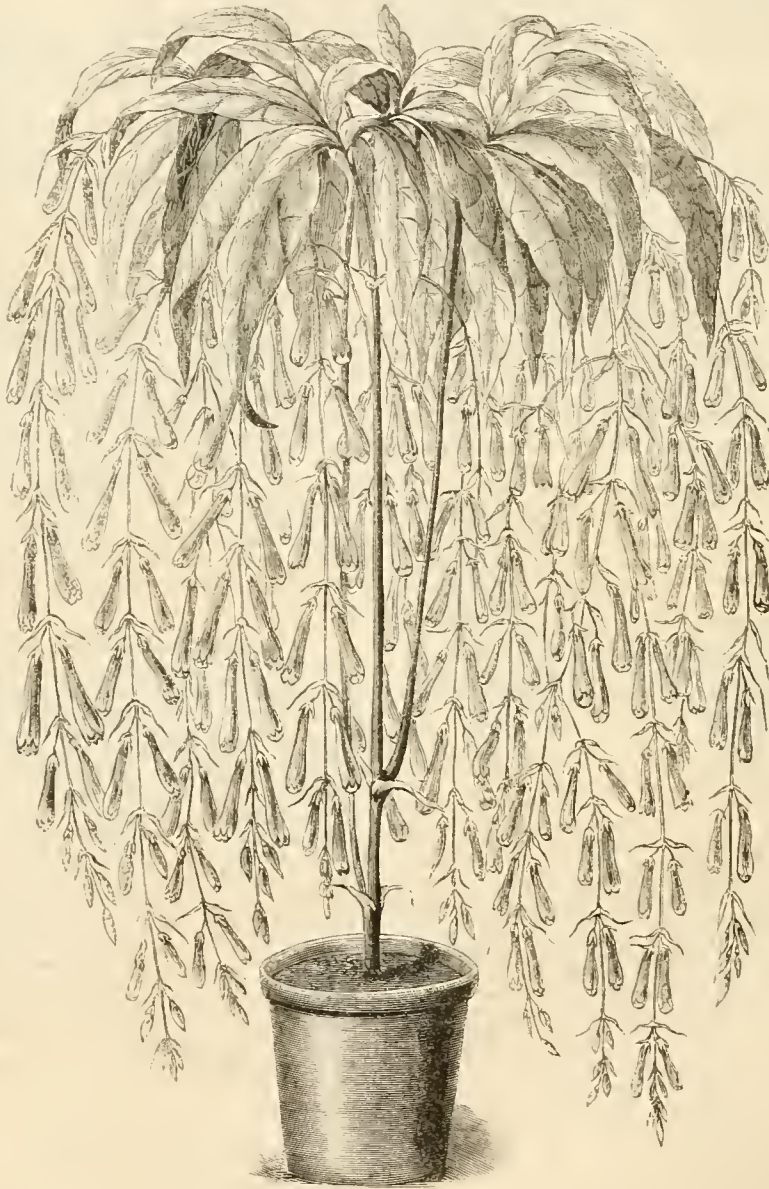
"Cuttings planted in sandy peaty soil, covered with a bell-glass, and placed in a sharp bottom heat, soon emit roots, and if these are put in early in spring they will form nice plants for flowering next winter. The cuttings should be potted singly as soon as they are well rooted, and placed in a close, moist, warm pit or house till well established; and if they can be afforded a gentle bottom heat, this will greatly assist in promoting the emission of roots and inducing full growth. The young plants must never be allowed to suffer for the want of pot room, as this tends to make them even more leggy than they are naturally inclined to be; therefore, until the plants are in their flowering pots, attend to shifting before the balls get over-matted with roots.

"The best situation for the young plants during the growing season is a pit or house where they can be kept rather warm, close, and moist; and if they can be afforded a gentle bottom

* Our woodcut, with some correction, is copied from a North American periodical, in which our illustrations are copied without acknowledgment.

heat, this will be of great service in promoting vigorous rapid growth. A slight shade will be necessary on the forenoons of bright hot days, and the plants should be sprinkled overhead morning and evening in fine weather, affording them a liberal but careful supply of water at the root, and giving weak manure water occasionally to those that have well filled their pots with roots. Beyond keeping the centre shoot secured to a stake, very little good can be done in the way of training or stopping, for the plant never seems to grow freely or with any vigour, except when one shoot is allowed to take a decided lead of the others.

Side shoots, however, are produced very freely when the plants are grown rapidly in a brisk moist temperature and kept near the glass, and these should be slightly tied out without bending them down, so as to afford the foliage sufficient space. The habit of the plant, however, although it is what is deemed bad by plant-growers, is exactly suited to the inflorescence, for the long drooping spikes of bright-coloured flowers would not be half so effective if produced on dwarf bushy plants. But if, from any cause, side shoots are not produced freely, the plant should be bent down, leaving the eyes which are wished to start



Thyrsacanthus rutilans.

into growth the highest, which will check the growth of the leading shoot, and more effectually promote the growth of others than stopping would do.

"Discontinue shading, and expose the plants freely to sunshine after August, admitting air more freely to induce short-jointed wood. Attend, however, carefully to watering, and do not let them sustain any check, as with proper attention they will grow very freely till late in autumn. If the plants are wanted to flower early, they should be sparingly supplied with water, and kept rather cool for a few weeks; but they must not be allowed to get too dry, as this would injure the foliage; and, except for plants that are wanted to flower early in winter, there will be no artificial treatment necessary to induce them to flower

profusely, which they will do from January till May. The time at which they will blossom will, however, depend upon the temperature, for unless this is rather warm they will not flower so early. When in bloom they must be kept in a temperature of not less than 55° or 60°, for the flowers do not open in the temperature of an ordinary conservatory, nor do the spikes attain any length in a cool place.

"In order to preserve the plants in beauty as long as possible, avoid wetting the flowers in syringing, and keep the plants in good health by attention to watering, &c. After their beauty is over, remove them to where the temperature may be kept at about 50°, and allow them a month or six weeks to recruit their energies after blooming, cutting back the shoots as may be

deemed proper. Before placing them in heat give a liberal shift if necessary, and when the buds start keep the stronger shoots tied out, bending down and stopping any that may incline to outgrow the others, and syringe, &c., as recommended for last season, only that bottom heat may be dispensed with in the case of plants that are some size. And as there will be no necessity to keep them growing late in autumn, a plant or two for early flowering may be removed to a rather cool place and sparingly watered until the growth is checked, and then returned to the stove, where they will soon flower.

"The *Thysanacanthus* is a vigorous grower, and not very particular as to soil, except that it should be rich and light, and efficient drainage should be secured in potting. About equal portions of turfy peat and loam, with plenty of sand, will suit perfectly, and a little thoroughly decomposed cow dung would do no harm."

NOTES AND GLEANINGS.

ONE of the principal features of the British Agricultural Department at the VIENNA UNIVERSAL EXHIBITION is the stand of Messrs. Sutton & Sons, of Reading (English seedsmen to the Emperor of Austria). Although the space originally promised to Messrs. Sutton was so reduced as to prevent their erecting the trophy (upwards of 50 feet in height, representing agriculture, horticulture, and floriculture), which they had spent some considerable time in preparing, yet the display made by this well-known firm on the limited area allotted them is of the most effective character. It is surmounted by most truthful models of upwards of two hundred varieties of roots, vegetables, and Potatoes; one hundred and fifty varieties of Grasses for pastures, parks, and lawns, and several hundred sorts of their home-grown seeds. The firm has been honoured by a request from the Imperial Austrian Commission to supply seeds for sowing the extensive grounds on which the Vienna Exhibition stands. Nearly twenty-five acres have been sown with seed supplied by this firm, and notwithstanding that a portion of the grounds were sown late last autumn, and the remainder this spring, they already present a beautiful ever-green appearance, and are rapidly forming a close firm turf. The Director-General of the Exhibition, Baron Schwarz Senborn has on more than one occasion expressed his great satisfaction at the excellence of the seed supplied. H.R.H. the Prince of Wales, H.R.H. Prince Arthur, and the many other notables present at the opening ceremony have repeatedly visited Messrs. Suttons' stand, and have been greatly interested in its numerous and varied attractions.

— It has gladdened us to read the evidence of Mr. Pease, one of the members for South Durham, given before the Committee of the House of Commons on the coal supply. He stated that from his own observation he could say the rise of wages had greatly improved the comfort and position of the men. The condition of their houses was improved, and their little gardens better looked after. In some of their homes which he had recently visited he found books and other evidences of the occupants applying their money to a good use. One man kept him half an hour to look over his collection of insects, and everywhere he saw signs of great improvement. The deposits in one of their building societies, consisting of 268 members, amounted in 1872 to £3900. Most of the men, too, belonged to co-operative stores, and were subscribers to the Hartley Accident Fund. From 1866 to 1872 his firm had built 525 houses for their men, and they had now 206 on hand in order to make provision for a considerable increase in production.

— At Croydon during the night of the 19th inst. the thermometer fell to 28°, and not only were the leaves of Potatoes blackened, but the tips of the Asparagus shoots were injured.

— M. P. BERT, in the *Belgique Horticole*, has been going over the experiments of General Pleasanton on the EFFECT OF COLOURS ON PLANTS, and after detailing the different degrees of injury resulting from various coloured glasses, concludes by saying:—"Lastly, all colours, taken alone, are detrimental to plant life; their union in the proportions constituting ordinary or white light is requisite to healthy vegetation, and it therefore behoves horticulturists to renounce the idea of employing coloured glasses or other coloured materials for glass houses and garden frames."

— In a paper read before the Linnean Society on the Cinchonas, Mr. Howard brought forward some curious and rather unaccountable facts. It appears that amongst plants raised from seeds obtained from the same pod, some will produce trees the bark of which yields QUININE of excellent quality

in large quantity, while with others the bark is absolutely worthless for medicinal purposes. Propagation should therefore be chiefly carried on by taking cuttings from the quinine-yielding trees. No satisfactory explanation of this fact has yet been offered.—(*English Mechanic*.)

— A CORRESPONDENT of the *American Country Gentleman* gives the following table, showing the amount of POTASH IN THE ASHES OF PLANTS. 1000 lbs. of ashes, made by burning different kinds of wood contained of potash: Pine, $\frac{1}{2}$ lb.; Poplar, $\frac{3}{4}$ lb.; Beech, $1\frac{1}{2}$ lb.; Maple, 4 lbs.; Wheat straw, 4 lbs.; Corn stalks, 17 lbs.; Oak leaves, 24 lbs.; stems of Potatoes, 55 lbs.; Wormwood, 72 lbs.; Sunflower stalks, 19 lbs.; Oak, $2\frac{1}{2}$ lbs.; Beech bark, 6 lbs. The remaining portion of the ash, consisting of carbonate and phosphate of lime, iron, manganese, alumina, and silica, is an excellent fertiliser.

A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 9.

MASDEVALLIA.

MASDEVALLIA HARRYANA.—The stem-like pseudobulbs of this kind are about 6 inches high. Leaves oblong, obtuse. It produces large and handsome blooms measuring some 5 inches or more in diameter. The sepals are rich magenta, shaded with yellowish green, especially towards the base. It comes from New Grenada.



Masdevallia tovarensis.—(Bot. Mag.)

M. CHIMERA.—In habit similar to the others. Leaves somewhat cuneate and oblong. The sepals are drawn out into long tail-like points, rich yellow, and clothed with black hairs; the lip is pouched and deep golden yellow in colour. This is an extremely beautiful and rare species, recently introduced to our collections from South-west America.

M. TOVARENSIS.—This species has been longer established in

our collections than the previously-named kinds, and deserves the attention of all growers of these plants, because no more elegant flower can be used for the decoration of a lady's hair at a ball or party than its lovely snow-white blossoms, which are produced during midwinter. Moreover, the scape is double-flowered, and if the top is not cut off more blooms will push out, after the style of *Oncidium Papilio*. Native of Columbia. —EXPERTO CREDE.

CORYNOCARPUS LÆVIGATA.

(Preliminary Notes on the Isolation of the Bitter Substance of the Nut of the Karaka Tree (*C. lævigata*). By W. SKEY, Analyst to the Geological Survey of New Zealand. Read before the Wellington Philosophical Society, 1st July, 1871.)

A VERY interesting as well as a most important investigation in any country, whether for toxicological or for scientific purposes generally, is that which has for its object the identification and examination of the particular principle to which is due those poisonous or other marked effects which may have been observed on the administration of certain of its plants or herbs, or parts of them, to the animal system.

But especially is this the case in the country we are now settling, the character of its flora being in certain respects peculiar, and in many cases greatly divergent from that of any other country we are yet acquainted with. Any addition, therefore, from such a quarter to the number of active principles recognised can hardly fail to be of value, as enabling us to attain to a more comprehensive view of the whole subject of vegetable medicinals or poisons, the manner of their association with other principles or with particular orders or parts of plants, and, lastly, the mode in which they operate in producing their individual effects; while there is, besides, the chance that any principle so isolated and identified may be more useful medicinally, and more readily administered when separated from the plant.

Altogether the subject appears to be one eminently worthy of careful attention, and I have therefore from time to time examined many of those plants which have come the more prominently under notice by reason of their acknowledged potency in respect of the characters stated.

The last subject of these investigations has been the kernel of the fruit of the Karaka tree, which, as is pretty well known, is extremely poisonous to man if taken in an unprepared state; and though I have not yet completed it, sufficient knowledge has, I think, been arrived at to render a statement of the results so far obtained interesting.

Not having personal acquaintance with the mode in which the Karaka berry is prepared as food by the natives, nor of its action as a poison, I am indebted to Mr. W. Colenso, F.L.S., for the following accurate information.

"1. Preparation as food.—The kernels were prepared for food thus: In the autumn a large party would go to the Karaka woods on the seacoast, which were mostly rigidly preserved (tabooed), to gather the fruit. This was generally done by beating them down with a long pole (hence the term *Ka haere ki te ta Karaka*—the verb *ta*, to hit or strike sharp, short, sudden blows with a stick; the same verb is used in speaking of the operation of tattooing): after which they gather them up into baskets. In or near the adjoining beach large pits were dug for earth-ovens, into which, when ready, the Karakas were poured, and the earth banked-up in the usual way. These ovens were left several hours before they were opened—generally till the next day, or even longer, when the Karakas were taken out, put in baskets, laced up, and placed under water, often at the mouth of some neighbouring stream or quasilagoon, where also they remained some time (I believe a day or two at least), for the double purpose of destroying all remains of the poisonous quality, and for the loosening and getting rid of the skin and flesh (sarcocarp) of the fruit; when they were washed clean by knocking them about pretty roughly to rid them of the outer skin, &c., taken out, spread in the sun on mats and stages, and carefully dried; and when quite dry again put up in new baskets for winter use, for feasts, for distinguished visitors, and for gifts to friendly chiefs and tribes residing inland.

"As the same Karaka woods did not bear alike plentifully every year, the years of barrenness were to the tribe seasons of calamity and want, the Karaka being one of their staple vegetable articles of food.

"2. The symptoms attending cases of poisoning through eating the raw kernel were violent spasms and convulsions of the whole body, in which paroxysms the arms and legs were

stretched violently and rigidly out, accompanied by great flushings of heat, protrusion of the eyes and tongue, and gnashing of the jaws, but unattended by vomiting—very different in appearance and result from the bite of the poisonous spider *katipe*, of which I have also seen and attended several cases, which are of a much more mild type and never fatal. I mention this, as both were likely to be caused in the same locality (near the uninhabited seashore), and season, and at first by a tyro might be mistaken. Unless speedily attended to, the poisoning by Karaka proved fatal; and even in those few cases in which I have known natives to recover, very likely it was more owing to the small quantity of the poison received into the system than to the means used as internal remedies. As the sufferers were invariably little children, they were more easily dealt with; and to prevent the limbs becoming distorted or stretched and rigid, a pit was quickly dug, into which the child was placed in a standing posture, with its arms and legs bound in their natural position, and the mouth gagged with a bit of wood to prevent the sufferer biting its own tongue; and there the child was left, buried up to its chin, until the crisis had passed by. Sometimes it was also plunged repeatedly into the sea before being pitted. Fortunately the cases of Karaka poisoning were but few, owing, no doubt, to the hard texture and disagreeable taste of the Karaka kernel in its raw state; very much fewer than those arising from the eating of the sweet fruit of the Tutu (*Coriaria*), which latter, however, were more easily managed by the natives.

"The writer well recollects having seen at Wangarei (Bream Bay), in the years 1836-9, a fine healthy youth about twelve years of age who had been recovered from poisoning by Karaka kernels. He, however, had not been properly attended to as to the tying of his limbs in their right position while under the influence of the poison, and he was therefore now a curious spectacle, reminding one of the instrument called a catreps more than anything else. One leg was curved up behind to his loins, and the other bent up in front with the foot outwards; one arm inclined behind his shoulder, and the other slightly bent and extended forwards, and all, as to muscles, inflexibly rigid. He could do nothing—not even turn himself as he lay, nor even drive off the sand flies, which were there in legions, from feasting on his naked body, nor scratch himself when itching, nor put any food to his mouth. He was the only child of his parents, who, fortunately for him, were both alive, and took great care of him, turning and shifting his position very often by day and night, as, from his body not evenly resting, he could not possibly remain long in one position. When not asleep he was laughing, if not eating, and greatly enjoyed his being so placed that he could see the children at play, in which he always encouraged them by his voice, often seeming the merriest of the village. I frequently sat by his side during my visits to talk with him and drive away the tormenting sand flies, which he would beg me to do. His skin was remarkably fine and ruddy—I might call it pretty—being wholly without eruption, blemish, or scar; his teeth pearly white, and voice and laugh regularly strong, hearty, and ringing. His eyes were very brilliant and of an intelligent cast, but in conversing with him I always thought his intellect was not sharp, or developed, as ordinarily that of Maori boys of his age."

This interesting account discloses the fearful nature of the poison of the Karaka nut, and also that the Maories employ two distinct processes—baking and washing, in their mode of preparation of this article for food; but it cannot be gathered therefrom whether both processes are necessary for the removal of the poison from the kernel, and if not, which is the essential one.

It will be noticed that the kernel only is spoken of as being poisonous, the fruit which surrounds it in its natural and ripened state being, as is well known, wholesome and pleasant, though not powerfully flavoured. In pursuance of my object, therefore, I gathered a quantity of the kernels from which the fruit had completely rotted off, and after removing the woody husk I bruised them very finely, and put part to bake at a temperature of 212° for four hours, when it appeared their bitter flavour was destroyed. The other part I steeped in successive quantities of cold water for two days. The steep-water separated from the bruised nut contained a great variety of substances, those positively identified therein being approximately in the order of their relative abundance as follows—Vegetable albumen (emulsin), casein (legumin), grape sugar, gum, a bitter substance, and a tasteless essential oil, which latter floated in greater part on its surface. The solid insoluble

part of the nut left after the successive additions and abstractions of water was nearly tasteless and completely devoid of all bitterness, and showed a resemblance in chemical composition to the insoluble part of hazel nuts.

The competence of either of the processes used by the Maories (baking or washing), in the preparation of the nut, for the decomposition or removal of the bitter part of it being thus shown, it naturally occurred to me that this bitter might be the poisonous part of the nut. I therefore made the isolation of this principle for the present my first object. The bitter part in question was soon found to be capable of absorption by animal charcoal, and of removal therefrom by hot alcohol. I therefore took advantage of this deportment to obtain it in a pure state for examination. The details of this process are as follows :—

The kernels are well crushed and triturated with successive quantities of water (cold) till their bitter taste is gone. The solutions thus obtained are rendered distinctly acid to the taste by acetic acid, by which the casein and emulsin present are precipitated, and the filtrate therefrom agitated with animal charcoal till the bitter substance is removed. The charcoal is then collected and mixed with boiling alcohol, and the pure alcoholic solution of the bitter substance thus obtained is allowed to remain for two or three days at common temperatures, when the bitter part crystallises out in beautifully radiating acicular forms.

The character of these crystals is as follows:—Intensely bitter; colour, white; lustre, pearly; feebly acid; at 212° Fahr. melts; gives a dark rose coloration with warm sulphuric acid; soluble in hot water, and feebly so in cold water; soluble in alcohol, also in hydrochloric and acetic acids; soluble in ammonia and potash; insoluble in ether and chloroform; does not give any precipitate with tannic acid, nor with potassio-iodide of mercury, nor potassio-sulpho-cyanide of zinc; does not contain nitrogen.

The evidence as submitted above shows that the principle is not of an alkaloidal nature. Its deportment with sulphate of copper and potash is strikingly similar to that of digitaline to the same tests. Both give green precipitates of a tint very similar to arsenite of copper. This property of either of these vegetable principles to give green precipitates with copper under these circumstances seems characteristic of them, as, among the numerous substances the most likely of any I know to give this reaction, not one has on experiment been ascertained to deport itself in this manner. Thus either of these principles is readily distinguishable in this way from picrotoxin, resins generally (including common resin), soaps, gums, and the bitter principle of *Phormium tenax*.

The green precipitates formed in this way by the bitter of the Karaka and digitaline respectively are, however, readily distinguished from each other by subjecting them to a rise of temperature (120° to 212° Fahr.). That containing the digitaline is unaffected, while the other precipitate speedily changes its colour to yellow, the copper being reduced to the sub-oxide, as if grape sugar were present. Further, if the proportion of the Karaka bitter to the copper and potash is not properly adjusted, reduction commences at once. It appears, however, that if the solution of digitaline is boiled with acid prior to the mixing with copper and potash, a great reduction of the copper will take place on raising their temperature to 200° Fahr.

Taking all these facts into consideration, I am inclined to believe that the bitter of the Karaka nut is a glucoside, and that digitaline falls into the same class, though I have not known this character imputed to it before. An appropriate name for this bitter principle of the Karaka will be, I think, karakine, and this name, therefore, I propose to give it.

Having failed, after a careful examination of the nut for vegetable alkaloids, to find any principle having the characters of these bodies, I conclude that the bitter substance here treated of (karakine) is the poisonous part of it; but not having sufficient of this principle separated to allow of a proper trial of its effects upon the animal system, I am unable to confirm or disprove the correctness of these surmises; but I hope at an early date to be able to supplement this paper by a statement of results of experiments undertaken to settle the question.

As being connected with this subject, I may state in conclusion that the inner bark of the tree is also bitter, probably from the presence of karakine. The outer bark is not bitter, but astringent from the presence of tannin; while the sap, the wood, and the leaf, which is, I hear, wholesome to cattle, taste sweet (sugar), with not the least bitterness. These observa-

tions were taken in July.—(Communicated by W. SWALE, *Arvon-side Botanic Gardens, Canterbury, N.Z.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE Broccoli season being now nearly over, the stumps should be all cleared away and the ground dug, or if intended for Celery trenches these may be prepared without digging the whole of the ground. Keep all the salading crops well watered in dry weather, or they lose much of their crispness. As soon as the spring-grown *Spinach* is fit for use dig-in the autumn-sown. As soon as the *Bean* pods begin to form at the lower part of the stem, top the plants, which will greatly forward the cropping of them. Earth-up the successional crops after a shower. Prick-out the early sowing of *Brussels Sprouts* to strengthen them previous to planting-out finally. Sow *Early Horn Carrot* to draw young during the summer. The early crop of *Cauliflowers* must now be liberally supplied with water. If large heads are required manure water may be given them, but for private families those of a moderate size are generally preferred; therefore, manure water may be dispensed with. As *Cucumbers* advance in growth under hand-glasses peg them down; water them in the morning when they require it, but this should only be done when it is likely to be succeeded by a fine day. In pruning-away any of the shoots and leaves, cut close to the main stem. This I am aware is contrary to the practice of some good growers, nevertheless I believe it in no way injures the plant; in fact, I believe the wound heals more quickly than if a piece of stalk remain until it has gradually rotted away. Thin-out the *Parsley* of the early sowing to 6 inches apart. More seed may now be sown. Continue to earth-up and stick the successional crops of *Peas*; as soon as the earliest crop begins to pod, supply it with plenty of water to forward the produce. At the time of sowing, during dry weather water the drills after they are drawn and before the seed is sown. Sow the Long Scarlet and Turnip *Radishes*, water every night during clear dry weather. Prick-out some of the earliest sowing of *Savoy*s and *Scotch Kale*, shade with mats for a few days until the plants take fresh roothold. Remove the pots from *Sea-kale*, also the covering as soon as done with, and afterwards dig between the plants. Thin the early crops of *Spinach*, and sow again for succession.

FRUIT GARDEN.

There is generally so much to do in other departments at present that Pear and Apple trees, &c., on walls are apt to be neglected. How else can we account for the unsightly hedge-like appearance which in a short time they will generally present? Many imagine a Pear tree would be ruined if its shoots were removed before they became sufficiently ripened so as to prevent any of the buds left in the base of the shoot from starting. In such a case the buds left have had little opportunity of concentrating for themselves the elaborated juices, the fruit is often injured by the simultaneous removal of shoots that previously shaded it from the sun, the relative action going on between the root and the top receives a sudden check, but a check seldom to the benefit of the cultivator, as already there will be a sufficiency of crude sap in the branches and roots to cause these buds left at the base of the shoots to break again into shoots next season instead of these desirable small spurs, the precursors of fruit buds. Others, again, with more reason and science advocate the partial breaking of the shoots so that they may be placed in a pendant position, contending that thus the buds intended to be left are not unnecessarily shaded, and that no sudden check is given. But even in this case the buds left at the base of the shoot will seldom become fruit buds until after another summer's maturation, while the pendant shoots shade from the influence of light those leaves upon the small spurs from which you expect to obtain fruit buds next year. The existence of a mass of breastwood indicates that the plant commands more nourishment, such as it is, than the circumstances in which it is placed will enable it to appropriate to fruitful purposes. In checking this luxuriance, would it not be a preferable method to limit at once the action of the shoots upon the roots by pinching-out their points when from 4 to 6 inches in length? This will require to be repeated during the season, but there will be no danger of the lower buds breaking, no sudden check will be given to the system, no unnecessary shade afforded to these parts which ought to be fully exposed, and if persevered in and the tree is favourably situated, there will be little occasion for resorting to the modern panacea for most fruit-tree ills—root-pruning. It must be adopted with caution in the case of weak trees, and those new sorts which bear freely and chiefly on the two or three-year-old wood. Keep an eye to the Gooseberry bushes, for although they may be once cleared of insects, another generation may soon make its appearance. Water Strawberries where they are growing in dry situations.

FLOWER GARDEN.

After planting out your beds make a reserve of a few plants of

each kind to fill up gaps, and also, if you have any beds of annuals, reserve some plants in pots to replace them as soon as they get shabby. The importance of properly mulching the beds cannot be too much insisted upon, and where it is inconvenient to use short grass because of its untidy appearance, the beds should be surfaced an inch thick with leaf mould or fresh light soil, or where neither can be used hoe the beds over, so as to form a loose surface. Mulching is advantageous not only for saving labour, but also, where cold spring water has to be used, from preventing the soil from being unnaturally cooled by the frequent application of water from a cold medium. The indispensability of using water as warm or even warmer than the soil is well known to practical men, and a few experiments will soon satisfy the amateur of its advantages. As "worm 'i' the bud" of Roses is making considerable havoc in some gardens, look carefully over the plants and destroy the larvæ between the finger and thumb; at the same time you may regulate the growth of the plants where necessary. The Cloth of Gold is a very vigorous grower, and, like some of the other Noisette varieties, will grow to the length of 10 or 15 feet before it blooms. Seeding Auriculas may now be pricked out into pans or boxes of leaf soil and sand at regular distances, keeping them in a closed frame for a few days till they have taken fresh root, when they may be placed in the shade and protected from drenching rains. Tulips still continue to be the centre of attraction. The reports from various quarters describe the bloom as generally good, but those which miss flowering are very numerous. Bees are apt to get inside the flowers, disturbing the farina. The careful florist with a camel-hair brush will remove it, so that the purity of the cup may be apparent. Ranunculuses are growing fast, but are in much want of rain. If they have been top-dressed with very rotten manure, as previously recommended, they will in some measure have escaped the effects of the drought. As Carnations continue to grow, keep them regularly tied-up to their flowering-stakes; the pots must also be well attended to; all weeds must be removed and the plants top-dressed. Dahlias may now be planted out with safety.

GREENHOUSE AND CONSERVATORY.

A very free ventilation will now be necessary, using atmospheric moisture in proportion. Give every encouragement to the growth of Azaleas intended for forcing early, watering them freely, especially when pot-bound, with weak liquid manure, stopping unequal or over-luxuriant shoots with the hand, in order to render the plants compact. Those Camellias which have completed their growth should be cooled down; no artificial heat will be required. If they are of a somewhat luxuriant character, the best plan is to keep them short of water for a month, giving merely sufficient to keep them from flagging. This, after early forcing into wood, will ensure the production of blossom-buds. Let Pelargoniums have weak liquid manure occasionally, also Cinerarias and Calceolarias. Let some Neapolitan Violet cuttings be struck for next winter's blooming, and get out what Chrysanthemums are required.

STOVE.

Cultivate and get forward as soon as possible the various young stock intended for flowering through the autumn and winter. The Euphorbia jacquiniiflora looks very nicely if planted three in a pot. The Gesnera elongata should not be forgotten, nor Begonia manicata and incurva. Some of the Justicia, as salicina, the Geissomeria, &c., will be useful. For Orchids, keep up a considerable amount of moisture in the air, and syringe the blocks frequently. Fire heat may now be dispensed with, but the house should be closed early, particularly when the nights are cold. If the plants are syringed in the afternoon it should be done early, so that they may dry before night. Many of the free-growing plants will require shifting occasionally.—W. KEANE.

DOINGS OF THE LAST WEEK.

No rain has fallen except that alluded to last week, and a cold dry east wind has been blowing ever since; the thermometer having fallen on one occasion to 33°. All the crops are in a backward state. The earliest Potatoes in the fields are little more than just through the ground, and where much exposed have been touched by the frost.

KITCHEN GARDEN.

Peas have been sown for succession. This is done when the last sowing has been above ground for a week. Champion of England and Veitch's Perfection are the sorts usually sown at this time, but we have added by way of trial Carter's G. F. Wilson and Laxton's Omega; the first is earlier, and the second later than Perfection, which has long held the highest position in our estimation as a late Pea. Whether any of the new ones will displace it remains to be proved. The earliest Peas have done badly this year; the border where they are sown was occupied with Strawberry plants in pots last summer and autumn. What with that and continuous rains late in the season the ground was very wet, which sufficiently accounts for the bad result. The sorts sown were Laxton's William the First and Alpha, Eastes' Kentish

Invicta, and Taber's Early Perfection. They have flowered in the order named, but Alpha is the most promising; it was our best early Pea last year.

Asparagus is very good; we do not remember having ever cut better heads of this excellent vegetable; it is also producing abundantly.

Dwarf Kidney Beans should have been producing abundantly, but they were not required, and we did not sow them. Our usual practice is to sow in boxes thickly, and transplant, when the first rough leaf is formed, four plants in an 8-inch pot. It is astonishing how long the same plants will continue to bear if the pods are picked as soon as they are ready.

We have been looking over the Pear trees on walls. Some double oblique cordons were a mass of young wood; this has all been cut back to three or four leaves, and the leading shoots trained into the wall. Notwithstanding the cold, the fly has appeared on some Sea-kale plants which had just formed the seed leaves. We find spent hops from the brewery the best preventive, as well as cure, for this pest.

FRUIT AND FORCING HOUSES.

The same work has been continued here as last week. There is a good succession of Pines in the fruiting house. Queens have thrown up fruit freely, and promise to be good. Offsets that had formed on the stalks and at the base of the fruit have been removed. It is the custom with many growers to give Pines manure water when the fruit is swelling, but it ought only to be applied in the early stages, and it should be weak; a small pinch of guano in the water pot, just enough to colour it, is as good as anything. The evaporating troughs are now kept filled with water. All through the winter and spring months a sufficiently moist atmosphere can be maintained by sprinkling the paths and walls of the house twice daily.

Vines in the late Muscat house are now in flower. All shy-setting sorts requiring a high temperature set best in a night temperature of 70°, with a moderately dry atmosphere. Our usual practice is to allow the evaporating troughs to become dry, but continue to damp the walls and paths in the morning, and again when the house is shut up in the afternoon. On visiting a celebrated old garden the other day I noticed a fine house of Muscat of Alexandria, and the intelligent gardener, on being questioned about them, said, "When the Grapes were in flower the house was frequently down as low as 55° at night." This proves that Muscats set in a low temperature, at least at night. In the vineries here we do not allow the temperature to fall below 70°, and the bunches are shaken gently twice a day. This, with a rather dry atmosphere, causes them to set freely. We do not stop the lateral shoots while the fruit is setting; as soon as it is all set the laterals are stopped. The cutting east winds have caused us to be alert in regard to ventilating, as the incipient berries are very susceptible to rust, especially those of Black Hamburgh.

Melons are flowering in the second house, and are looking well. We are giving Monro's Little Heath a trial; it is earliest in flower, and is a very free-fruited sort. Our plants are not cropped heavily, three or four fruits being all that are allowed on a plant. We are careful to select a sufficient number of female flowers that are all open on the same day, if possible. There ought not to be more than twenty-four hours' difference between the time of impregnating the flowers; if longer the fruit will not swell evenly. Red spider has not appeared as yet, for which we are thankful, as we do not like to syringe them, and to paint the pipes with sulphur will not do, for if the fumes are powerful enough to kill the red spider, the leaves, which are very tender, will be much injured. Thrips, which used to be very troublesome on the Cucumbers, seem at last to have succumbed to persistent fumigating with tobacco smoke.

ORCHARD HOUSE.

Aphides were more than usually numerous; we did not fumigate sufficiently before the trees were in flower, and by the time the blossoms were well expanded they came in legions. We did not smoke until the fruit was set, and one or two of the worst-infested trees have been permanently injured, many of the leaves having turned yellow and fallen off. Peaches and Nectarines have all had the fruit thinned. It was a tedious process, as the fruit was as thick on the branches as peas in a pod. We have thinned all the Strawberries in the same house; they are two weeks later in flowering than usual, and the foliage is somewhat drawn up. The Strawberry plants have weak manure water every day, and they require a large quantity just now. When the trusses were being thinned a peculiarity was observed in one sort—viz., Premier. This has always been good in pots, but in the present year a large proportion of the fruit is blind, and some badly shaped. All the other varieties promise to produce large well-shaped fruit.

CONSERVATORY AND PLANT STOVE.

Tying and regulating the growing shoots of climbers. It is not well to tie them in too closely; some of the shoots ought to hang down loosely, and others be festooned from one wire to another. None of the shoots should be allowed to twine round the wires or each other, especially in the stove. Such subjects

as *Stephanotis*, *Dipladenias*, &c., which are liable to be infested with mealy bug, cannot readily be cleansed when the shoots are twined-in closely.

We finished basketing and potting nearly all the Orchids requiring attention. In some instances the compost had become sour; this was removed, and fresh peat and sphagnum added. No Orchid will thrive if over-potted, or if the peat and sphagnum has become the least sour.

We have been placing sticks to Tree Carnations and *Rosea*. The first-named have supplied us with plenty of cut flowers since Christmas—indeed, we are never without them; at the present time *Turner's Bride* is in with very little forcing. It is a very fine clove-scented variety. Some of the flowers measured $3\frac{1}{2}$ inches across, but the smaller side flowers are most serviceable for cutting; they are waxy white, with just a tinge of rose at the edge. Many of the varieties are apt to have the calyx split by the flowers being too full. The best way to do with them is to have a box at hand with indiarubber rings of a small size; these are slipped over the flower before it is too much expanded.

Show Pelargoniums are in full flower. We put a permanent shading of fine tiffany outside the glass, as they are in a house where it is not convenient to fix rollers; nearly all our other houses are supplied with them, as permanent shading is injurious to all growing plants.

FLOWER GARDEN.

All the bedding plants are out, except the tender subjects, such as *Iresine*, *Colene*, *Alternanthera*, *Heliotropes*, &c.; they must remain under glass until the weather changes.

As we write the wind is veering round to the west; it is not warmer, but an occasional drizzle of rain is falling. Though it has been so dry we have not watered, except in an exceptional case, where the planting was done under trees, or where little rain could reach them. A large proportion of our plants were in boxes; indeed, with the exception of *Zonal Pelargoniums*, which do best in pots, the others go out best from boxes. We put in cuttings of *Phlox frondosa* and *Lithospermum prostratum*. The one makes a pretty bed of pink flowers on a dense carpet of pale green, and the last-named makes an equally charming bed of deep blue. They were inserted in light soil, and the pots placed in a hotbed where the heat was almost spent.—
J. DOUGLAS.

TRADE CATALOGUE RECEIVED.

T. Bunyard & Sons, Maidstone and Ashford, Kent.—*Select List of Bedding-out Plants, Greenhouse Plants, &c.*

TO CORRESPONDENTS.

*. We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*Earsdon*).—"The Garden Manual" contains full directions for Rose-culture. You can have it free by post if you enclose twenty postage stamps and address.

AQUILEGIA AUREA (*W. B. H.*).—You could procure the seed of this and *A. canadensis* through any of the leading London seedsmen who advertise in our columns. It is by no means expensive.

BEDDING-OUT (*E.*).—We cannot particularise planting; we can only criticise that which is proposed.

HEATING BY LIME-KILN (*J. C.*).—There is no doubt such a mode could be adopted successfully in some places. Details must be advertised.

NAME OF CRESS (*M. W. Wilson*).—It is *Barbarea præcox*, or Early Winter Cress. It is quite hardy, and a splendid salad herb. It is known also by the names of American Cress and Belleisle Cress.

REMOVING GREENHOUSE (*H. W. B.*).—Without knowing all the facts we cannot advise. If the framework of the house is fixed to the bricks or to the wall you cannot legally remove it, but you may remove the sliding lights. You may not remove either the boiler or the boiler house, but, probably, you may remove the piping.

FLOWER-GROWING FOR SALE (*Inquirer*).—There is more than one work on market gardening, but we do not know of any expressly devoted to flower-growing for sale, and we would not advise you to embark in it without some other knowledge than that imparted by books, as, apart from knowing the way to cultivate them properly, "a knack for business" is also required, and everyone does not possess that. Moreover, the flower trade, like that of other fancy articles, is liable to all the caprices of fashion, so that a recommendation to grow one class of flowers extensively this year might result in

finding no sale for it next. This kind of horticulture requires watching to keep in advance of public requirements.

PREPARING DUNG FOR A MUSHROOM BED (*Inquirer*).—We do not see any harm in sweetening dung for the purpose in the full sun, although we have not done so, as the place where we generally sweeten it is shaded by trees; but we cannot think that in the preparatory state the dung can derive either good or harm from the sun. In winter it is necessary to use a shed, otherwise it would become too wet. We do less in preparing our Mushroom-bed materials than most people, but use a portion of good fibrous loam, mixed with the dung in the bed itself. In summer it is more difficult to grow good useful Mushrooms than in winter, as maggots and other enemies prevail to a greater extent, and we apprehend that sweetening the dung in the sun will either increase or diminish that evil. The sun shines unobscured on a pasture field, and we know Mushrooms grow there.

FLOWER-BED ARRANGEMENTS (*Kittie*).—You have unfortunately omitted to state which of the four proposed plans is that adopted last year. All the proposed modes are good, and each would look well, the great recommendation of all being their simplicity. The centre is an octagon with incurved sides to suit the eight circles that come round them, and these are succeeded by eight other clumps rounded at the outside, the two inner lines terminating in a point that comes in between the circles—a very neat arrangement. Now, with your materials we would almost be inclined to plant in your centre bed a circle of white *Centaurea* banded with *Iresine Lindeni*, as likely to be more suitable in height than purple *Verbea*, then follow with *Christine Geranium*, and if not particularly wedded to *Sempervivum* for an outside edging, use a nice band of your dwarf *Ageratum*. Now, bear in mind, that however this garden is situated, either on the level or on the slope, very much will depend on the beds being well arranged as to height of plants. One or two staring beds among the circles, some 6 or 12 inches higher than the others, will destroy the symmetry of the whole. These eight beds of scarlet and crimson *Geraniums* should be as much as possible of a uniform height. In planting you might have four pairs or two fours. If you did not particularly wish to have *Mrs. Pollock* for the outside beds, and to have four of the eight beds alternately much the same, then we would recommend banding or edging the four scarlet *Geranium* beds with white variegated-leaved *Geranium*, and the four crimson beds with *Mrs. Pollock*. Plants of the variegated *Konika* among the white-leaved *Geraniums* will rather improve them, and so would plants of a dwarf blue *Lobelia* just peeping among *Mrs. Pollock*. Your outside range of beds, if you have a dwarf *Calceolaria* as *Aurea floribunda*, we would use for four beds edged with *Iresine* kept well nipped-in, and the other four alternately we would fill with purple *Verbea* and edge with *Pyrethrum*. You will thus bring into use most of your materials, and the very simplicity of the planting will constitute one of its greatest charms. As stated above, it will be all the more striking if the heights be studied well, so that there shall be no staring bed in the group.

FUCHSIAS, PELARGONIUMS, AND ROSES TO FLOWER IN SEPTEMBER (*J. G.*).

—The *Fuchsias* should now be nice young plants, from 6 to 9 inches high. We should shift them into 6-inch pots, using a compost of three parts turfy loam, half a part each leaf soil and old dry cow manure or well-rotted manure, with one-sixth of silver sand, and a like quantity of pieces of charcoal.—this compost we recommend for all the pottings. The shoots should be pinched at every third or fourth joint, so as to insure a well-furnished plant, the leader being stopped at every 6 inches, and a well-developed shoot of the break trained in its place. The plants must not be allowed to flower, and should be kept growing by syringing morning and evening, and giving copious supplies of water, not allowing them to flag for want of it, nor, on the other hand, giving any until it is needed. At the end of June or early in July they should be shifted into 9 or 10-inch pots, and at the middle of July, or from that time to the end, the stopping should cease, though it may be practised on irregular growths up to the beginning of August. The plants should then be allowed to go to flower. Liquid manure may be given, after the pots are full of roots, at every alternate watering; the plants to be grown in your cool glass structure without heat, and admitting air freely. The syringing should be discontinued when flowers are beginning to open. The *Zonal Pelargoniums*, we presume, are nice plants, in say 6-inch pots. We should stop them and tie down the shoots, disposing them equally all round. When they have broken freely shift into 8-inch pots about the middle of June, and keep them stopped up to the middle of July; all trusses of bloom to be picked off up to August. The plants should have the lightest part of the house, be kept near the glass, and be sprinkled overhead morning and evening. They would do well in a cold frame with plenty of air. The "fancy" *Pelargoniums*, by which we think you mean those with variegated leaves, should be potted now, again in June, and be grown in a cold frame, not wetting the foliage, but shading lightly from bright sun, training the plants out neatly, and not stopping after June. The *Roses*, we presume, are in pots and plunged out of doors, and have been potted; if not, it should be done at once, and without disturbing the roots much; 8-inch pots will be large enough. At the end of June cut each shoot back to within five leaves of its base, removing the buds as they show. Encourage growth by frequent sprinklings or syringings overhead and copious supplies of water at the roots, giving at every alternate watering weak applications of liquid manure. The plants will make fresh growth, and flower at the time you wish, if kept in a sheltered open position. It may be necessary to shield the plants from excessive wet; if such prevail in September they should be placed under glass with abundance of air. See that they do not root beyond the pots. The soil named for the *Fuchsias* will suit all the others.

WEDDING ONION BED (*St. Bridget*).—The market gardeners near London hand-weed, and, however large your plot, we recommend you to adopt the same practice. After the hand-weeding we should have the ground between the rows stirred with a narrow-bladed hoe.

HYACINTHS IN BORDER (*T. W.*).—They will bloom again next year if left undisturbed until the leaves die.

ASPHALT WALKS (*A. B.*).—Take two parts of very dry lime-rubbish, and one part coal ashes, also very dry, and both sifted fine. In a dry place, on a dry day, mix them, and leave a hole in the middle of the heap, as bricklayers do when making mortar. Into this pour boiling-hot coal-tar; mix, and when as stiff as mortar, put it 3 inches thick where the walk is to be. The ground should be dry, and beaten smooth. Sprinkle over it fine gravel; when cold, pass a light roller over it, and in a few days the walk will be solid and waterproof. Another book about *Roses*, besides that you have, is *Rivers's "Rose Amateur's Guide."*

DAPHNES AND RHODODENDRONS FOR A COOL GREENHOUSE (*Inquirer*).—*Daphne* are elegantissima, *Fortunei*, *indica alba*, *indica rubra*, *japonica foliis variegatis*, and *odorata*. They succeed in a compost of equal parts sandy

fibrous loam and fibrous saddy peat, half a part of leaf soil, and a free admixture of silver sand, with good drainage. Water freely when growing, and keep moist by sprinkling overhead; the growth complete, keep the plants rather dry but not so as to affect the foliage. Daphnes may be propagated by cuttings of the shoots when a little firm in summer, inserted in sand under a bell-glass in a close frame, but are much better grafted on young plants of the Spurge Laurel from seed. Graft in March or April with ripe wood, and place the grafts in a close pit, shaking until the union is complete. Rhododendrons are Countess of Haddington, formosum, fragrantissimum, jasminoides, javanicum, Princess Alexandra, Princess Helena, Prince of Wales, retensum, Veitchianum, ciliatum, Edgeworthii, and Nuttallii. They require fibrous saddy peat, and a third of light very fibrous loam, with free drainage. Repot in spring after flowering. Water abundantly when growing, sprinkle overhead twice daily, admit plenty of air, and keep moist in winter, but incline to dryness. Propagation is effected by layers in spring or autumn, and by cuttings of the young shoots when their base is rather firm, inserted in sand over saddy peat, and placed in a close cold frame for about six weeks, afterwards in a gentle bottom heat, also by grafting on stocks of similar habit of growth.

MARÉCHAL NIEL ROSE IN GREENHOUSE (*A Reader*).—It would be advisable to extend the root space for the Rose, draining it well, and using the compost you name; but we should not take off the loam with its turf more than 4 inches deep. We would not cut back many of the lateral shoots, but you may do so if they are very much crowded. Take out the very weak, old, worn-out shoots.

SPRINGING ROSE TREES DURING EAST WINDS (*Rathgar*).—It is not desirable to syringe them in cold cutting weather, with east winds in May; but it may be practised in the early part of the day without injury to the shoots.

DAPHNE INJURED—FERNS FOR CASE—CLEMATISES OUT-DOORS (*R. A. P.*).—The leaf sent shows that the plant has suffered from cold; with warm weather it will probably recover. Daphnes do not stand cutting winds, but should have sheltered positions. We do not know what you can do to it. For the case we should have in the centre a plant of *Nephrodium molle corymbiferum*, and round it *Adiantum assimile*, *Acrophorus hispidus*, *Adiantum hispidum* (pubescens), *Pteris serrulata cristata*, *Adiantum Capillus-Veneris magdolicum*, and *Davallia dissecta* at the angles of the hexagon. These will be sufficient. We should surface with *Selaginella denticulata variegata*. We do not think the drip from the suspected cork would injure the plants. Have on it *Nipholobolus rupestris*. Clematises—*Fortunei*, double white; *Lady Bovill*, greyish, suffused mauve; *Rubro-violacea*, narrow, shaded reddish violet; and *Sophia flore-pleno*, mauve, outer petals yellowish white.

TREATMENT OF CROCUS (*Firle*).—Cutting the leaves off in a green state will certainly weaken the corms. We do not like to see the leaves pulled, so we leave them alone until they change to yellow, when they are pulled off.

LEAVES OF PEAR TREE BLISTERED (*A. D.*).—We fancy it must have been caused by frost, with the sun acting early in the morning. The roots may also be in stagnant soil. If they were in a healthy state the tree would scarcely be so bad.

PRESERVING GRAPES IN BOTTLES OF WATER (*J. Mackenzie*).—Your attic would be a very good place to keep them in; indeed, if a place had to be made for them it could not be better. Treutham Black Grape does not bear freely pruned on the short-spur system for a length of time; the rod should be renewed every third year. Royal Ascot produces very small bunches, and the berries are liable to crack. It is not so good as Treutham Black, though neither is first-rate.

MYOSOTIS DISSECTIFLORA FLOWERING AT CHRISTMAS (*M. D.*).—You will need to have the plants well established in pots by the middle of September, and all flower-buds should be picked off up to October, when they should be placed on a light airy shelf in the greenhouse, watering as required to keep the soil moist. Early in November they will need to be placed in a house with a temperature of 45° to 50° by day from fire heat, and they will flower at the time you wish, or earlier. They will, as a rule, flower more or less during the winter from November, if seedling plants two years old are potted in September in 5 or 6-inch pots according to size, placed in a cold frame with plenty of air, and early in October removed to a shelf in the greenhouse. The situation cannot be too airy and well exposed to the light.

NAMES OF PLANTS (*J. G.*).—1, *Cupressus Lawsoniana*; 2, *Alnus*; 3, *Lanum purpureum*. The other specimens were too withered and imperfect to be identified. The insects were millipedes, *Julus complanatus*. They are said to eat holes into the tubers of potatoes, but we think that they only attack ulcerated tubers. (*W. F. R.*).—*Cheiranthus ochroleucus*. (*T. Bradshaw*).—The leaf sent is that of *Osmanthus ilicifolius variegatus*. The flower belongs to a species of *Cistus*. (*A. M. Z.*).—The *Phlox* sent is *P. frondosa*. We do not know where seed can be obtained, but if it is in the trade your own seedsman can obtain it. From a small plant bought for a shilling you could obtain scores in a season, it grows so freely. (*H. H.*).—*Heuchera pubescens*. (*Peter*).—1, *Acer* sp.; 2, *Sparmannia africana*. (*R. D. T.*).—*Veronica serpyllifolia*. (*F. G.*).—1, *Pimelea longifolia*; 2, *Some Begonia*, but quite unidentifiable. (*T. S.*).—1, *Rosa Banksiae*, var. *lutea*; 2, *Omphalodes verna*; 3, *Anemone nemorosa flore-pleno*. Yes, certainly. (*D. C. M.*).—It may be some *Euphorbia*, but the specimen is quite insufficient. (*A. B. Pede*). *Rhamnus Alaternus*. (*A. R.*).—*Asplenium (Dorea) flaccidum*.

POULTRY, BEE, AND PIGEON CHRONICLE.

AIDING CHICKENS' BIRTH.

EVERYONE interested in the breeding of poultry must be obliged to our clerical friend at Childerditch Vicarage for the information of slipping a chipped egg into a second shell. I have often gummied them, but never took it into my head to put on a new shell. During the part of this season, now past, I among many others have been most unfortunate as to success in getting chicks hatched; but during the past week I had some experience which might be of use to the readers of our Journal. I set a Brahma hen upon twelve Brahma eggs; they were due to hatch last Friday. On the morning of that day I observed the hen restless in her nest, making a noise, and pecking at something among the eggs. On examination I found that she was attacking a chick which was half out of the shell, shaking it as a dog

does a rat. I immediately lifted the chick, which died a few minutes after. Thinking that a mouse had disturbed the hen, I allowed the eggs to remain, and kept a strict watch upon her movements. It was not long till another little prisoner broke its shell, and was letting its voice be heard. I observed the hen rise and immediately commence an attack upon the egg, breaking the shell and taking hold of the chick by the beak. I took off the hen and put the eggs into hot water a little above blood heat. After keeping them there for some time, six out of the ten eggs left began to move about in the water; the other four I shook and found to be rotten. Keeping the temperature of the water up to the pitch, in half an hour five of the six chipped. I then removed the eggs into the oven of the kitchen stove, rolling them in flannel. I took one egg, and, carefully removing part of the shell, found that blood was in the veins of the inner skin which envelopes the chick. I replaced the egg in the oven; I took another, and removing the shell found the blood had been all absorbed. I then put the egg with the chick in warm water, blood heat; lifting the head of the chick from under its wing, I gradually removed the shell, taking care to leave the small part of the yolk left and a small piece of the shell attached. I put the chick in the oven to dry. I performed the operation on the six eggs and was successful with five. The chicks I put the same evening under a hen, which had a batch of seven that had been hatched on the Thursday previous. All the brood is now doing well, and as healthy as if hatched in the usual way.

Anyone who attempts the operation, which is easily performed, and which I have successfully done for the past two seasons, must be careful not to draw any blood, as this generally proves fatal.—C. B. T., *Montrose*.

EXHIBITION REFORMS NEEDED.

In respect to the losses of valuable exhibition birds from exposure in open-air shows, as stated by Mr. Hewitt a few weeks back, my own experience confirms what that gentleman states to the very letter. From this cause alone I have repeatedly met with very heavy losses, having lost several very valuable Carriers, Barbs, Almond Tumblers, Satinets, &c. My own opinion is no show should be held in the open air; in fact, in future I have made up my mind not knowingly to show at an open-air exhibition. I think it would be better that secretaries of shows should state whether they are open or not.

There is another matter connected with some of our northern shows that also requires amendment. It repeatedly happens at the Lancashire and Yorkshire one-day shows in the open field that not only are the birds exhibited without shelter, but also without food or water being supplied to them by the committee. In these local shows, where the bulk of the owners are present, no doubt the majority of the exhibitors will care for the preservation of their own interest; but I need not say more than that where birds are sent from a long distance, and away, perhaps, three days from their owner, such compulsory abstinence is most disadvantageous to the distant exhibitor, and that food and water should always be provided.

Another great evil is, at some of the shows exhibitors are allowed to pen their own birds, and at the close of the show to repack them. I was at a show a few days ago where this was done, and I think it very fortunate there were no dishonest parties about, or they might certainly have helped themselves, probably without being detected. I consider no party ought to be allowed to pen the birds except the committee. We also want reform in our Pigeon judges, as the other day the two best Carriers were entirely left out in the cold. I could say more, but fear to trespass too much on your valuable space.—H. YARDLEY.

BRAHMAS.

In answer to "J. K. L.," respecting Brahma pullets, I have a Light one which commenced laying last August, and continued to do so daily until the end of March, with the exception of three sitting bouts, averaging one week each time. She has now brought off a batch of chickens. I have had twenty years' experience as a poultry-breeder, and have during that time kept several different sorts. My opinion of Brahmas is, that for laying they are first-rate; and were it not for their sitting propensities, their abundance of leg, and deficiency of breast, they would stand first in my estimation. But fowls are wanted for the table as well as for the production of eggs. For the former use Brahmas are nowhere. To have the two properties combined no fowl equals the Houdan; the legs, unlike the Brahma, are short and small; the breasts and other parts equal to those of the Dorking both in quantity and flavour; and as for laying qualities, it is first-rate. I have a Houdan hen which commenced laying last September, and has continued to do so up to the present time. No matter about frost or snow in winter, it is all the same to her; she goes on contributing to her keeper a large white delicious egg day-by-day. No time is lost with Houdans in sitting bouts, nor do they entirely cease laying during the exhausting process of moulting; they will, if kept clean, which all fowls ought to be,

and must be to be remunerative, bear confinement remarkably well. Of course a few sitting hens must be kept for hatching Houdans' eggs. The chickens are hardy and grow very fast. The eggs are very fertile. From three hatches I have had this year every egg has proved a chick.

In conclusion I would add, that if fowls are wanted for the production of eggs only, and for a small space, Light Brahmas are the best of all; but if wanted for the table as well as for eggs, and a moderate space be allowed to keep them on, with an occasional run in the yard or kitchen garden in the winter, when they cannot do much mischief, Houdans are the fowls to keep.—JOHN SNOW, *Barrow-on-Soar, Loughborough.*

EXHIBITING SINGLE BIRDS.

AFTER reading the number of letters your columns have of late contained respecting the single-bird system of exhibiting, and noticing also how unanimous the opinion is on the subject, I write to keep the matter before the eyes of committees who have not yet adopted the principle, and hope my remarks will show how much more profitable it is to the funds of a society, how advantageous it is to exhibitors, and making judging easier and more satisfactory to the judges. In 1871 I resolved to try the plan at our show, and the result was most satisfactory, and since the Birmingham Summer Show, which was an immense success, there have been at least half a dozen of the largest exhibitions—viz., Croydon, Newcastle, Crystal Palace, Durham, Glasgow, and Bradford, held on the same system, and each give sufficient proof of the beneficial results to be derived in comparison to an exhibition on the pair system. The advantages to exhibitors are the opportunity of exhibiting a good bird when not having a suitable match, as no doubt every exhibitor experiences at times. There is also the inclination to enter as many good birds as a person thinks have a chance of winning, in order to give judges their choice of colour, &c. In addition there is not the danger of one bird damaging the other, as is the risk when two birds are put into a pen that have not been breeding together. It is also an advantage to those who keep only limited stock, which fact may be learned from the following conversation I had with one of the largest exhibitors at the Newcastle November Show. After the judging he said, "I don't like your single-bird system." "Why not?" "Because the classes are too large." Need I add that he was unsuccessful in many classes? When exhibitors have the advantage of making more entries it must follow that the funds of the exhibition will reap the benefit, not only in the entry fees, but also in commissions on the sale of more birds, &c.

I will only add a few remarks on the advantages to judges, of whom I wonder that there are so many ready to take that very responsible office, knowing well that there is always a certain amount of annoyance and unjust remarks in store for them. In single-bird classes a judge may see at once which pens can deserve the prizes, for he has not the perplexing fact, often the case with pairs, of one good bird associated with a poor one. Neither have they the unpleasant question of deciding whether each pen contains a cock and a hen. When such, the single-bird system prevents the too frequent occurrence of two cocks or two hens as a pair.

I need hardly say more, since it is evident that the system promotes the committee's interests, most assuredly renders a great service to exhibitors at large, and enables the judging to be done much quicker and more efficiently, and the doors opened at the stated time. My next notes will be on limiting the value of exhibition birds.—IMPARTIAL.

THE COMING OXFORD SHOW.—The Committee intend having a class for Malays at their second annual Show in October next, several fanciers of this variety having promised subscriptions, the whole of which will be devoted to the purchase of a cup or piece of plate at the option of the winner, the Committee giving second and third prizes. Black Cochins will have prizes awarded them; A. Darby, Esq., having offered to guarantee from loss, should the class not fill sufficiently to pay expenses. If the fanciers of these useful fowls would contribute, a cup would be allotted to them. Black Bantams will again have a separate class, the Rev. G. S. Cruwys assisting with a handsome donation. Black Hamburgs will on this occasion compete in a separate class. The Secretary will be glad to hear from anyone desirous of contributing towards a cup for either of the above, or any other class, which sums will be duly acknowledged in this Journal.—JOSEPH KING, *Hon. Secretary.*

THE VAN HAANSBERGEN TESTIMONIAL.—Mr. James Watts begs to acknowledge the following subscriptions to the testimonial to W. B. Van Haansbergen, Esq., on his resignation of the honorary secretaryship of the Northern Columbarian Society:—Messrs. W. R. & H. O. Blenkinsop, £1 1s.; Mr. W. H. Mitchell, £1 1s.; Mr. Frank Graham, £1 1s.; Mr. Nathaniel Dunn, £1 1s.; Mr. J. Towerson, £1 1s.; Mr. Joseph Firth, £1 1s.; Mr. J. E.

Palmer, £1 1s.; Mr. J. Watts, £1 1s.; Mr. O. E. Cresswell, 10s. 6d.; Mr. C. T. Copeman, 10s. 6d.; Mr. N. Ridley, 10s. 6d.; Mr. J. G. Dunn, 10s. 6d.; Mr. Blanchard, 10s. 6d.; Mr. John Guthrie, 10s. 6d.; Mr. Thomas Gallon, 10s. 6d.; Mr. P. H. Taylor, 10s. 6d.; Mr. W. H. Tomlinson, 5s.; Mr. J. F. Loveridge, 5s.; Mr. W. Gamon, 5s., and Mr. Thomas Waddington, £1 1s. promised. We have no doubt, though we have no relative information, that J. Watts, Esq., Hazlewell Hall, King's Heath, Birmingham, will gladly receive any contributions to this testimonial to a gentleman who is described in a circular before us as, "if not the best, one of the best secretaries, honorary or otherwise."

SILVER-GREY DORKINGS.

It is a pleasure to hear anyone praising Silver-Grey Dorkings. I should like to add my testimony in favour of them, as I think I have been even more successful this year than your correspondent the Rev. E. S. Tiddeman. My hens and pullets began to lay before Christmas. My first chicks were hatched on January 17th. I have no stove or any way of warming my fowl houses and nest places, which are only wooden buildings, but during the severe weather the hen and her chicks were put into a hamper at night and kept in the gardener's cottage. I have weighed these two chicks, both cockerels; one weighs 4½ lbs., the other 4 lbs. 5 ozs. My next chicks were hatched February 4th, so will do to compare with the Rev. E. S. Tiddeman's of February 1st. My cockerel weighs 4½ lbs., a pullet of the same brood 3 lbs. 6 ozs. I have now thirty-four well grown Silver-Grey Dorking chicks; I have not lost one from sickness this year, and in colour they promise to be as good as in size. My great difficulty with Silver-Greys has hitherto been to get size, but from the weight of those I have mentioned, it seems as if I were succeeding at last. I have never had a single bird with humble foot for the four years I have kept Dorkings in this country.

I must say one word in favour of Dark Brahmas, which I also keep. The pullets began to lay in November, and the hens early in January; they are still laying well and very few have been inclined to sit.—G. S. PASLEY, *Moorhill, Fareham, Hants.*

ACCRINGTON POULTRY, PIGEON, AND RABBIT SHOW.

THE Show of the Accrington Agricultural Society was held on the 15th, and, as at all such meetings in the county of Lancashire, the number of visitors was large. The poultry were arranged in single tiers on two sides of the field, and the pens were of a substantial character. The first prize competed for was a silver cup or £5 for Game cocks, and was won by a superior Brown Red; the second going to a good Black Red, and the third to a Brown Red. In single Game hens there were but two entries, but these were well worthy the award. In the local class for Game cocks the first was a capital Black-breasted Red, the second Brown Red, and the third a Pile; and in the open class for cock and hen, Black or Brown Reds, all the winners were of the latter colour. In Game cock and hen of any other variety there was a solitary entry, but a first prize was awarded, the birds being fit for any competition. Dorkings were a very good class, and the winners large and in good form. Of Buff Cochins there were but three entries, but the quality all that can be desired. On the contrary, the entries for Any other variety were good, Partridge being first and second, and Whites third. Black Spanish were one of the best classes in the Show, scarcely a pen but what was deserving of notice, the winners being very fine. In Brahmas the competition was very close among the birds that were noticed, but there were some bad pens. There were five classes of Hamburgs, and the entries good in all, and the competition very keen in most. In Golden-pencils there were some capital cocks, but the hens, as a rule, were best; and in the Silver-pencils every pen was noticed. In the Gold-spangles the hens were somewhat faulty, if we except the first-prize bird; but the cocks were pretty regular in quality. The cup for Hamburgs was won by a pair of Silver-spangles of rare merit, both birds being about perfect, and in the best possible plumage; and there were also several other capital pairs. The three winning pens of Black Hamburgs were very close upon each other, and the class very good as a whole. In French fowls the winners were all Crève-Cœurs, and these were much better in point of character than the Houdans, which were more numerous. Of Polands there were but four entries. The Selling class contained some good and cheap lots, the first being Spanish, the second Cochins, and third a Brown Red Game cock. The first in the Variety class was a splendid pair of Red Malays. There were six classes for Bantams, five of which were devoted to Game. In single Bantam cocks the contest was very close, the winners being all Black Reds, the first of which embodied all the properties of a high-class Game cock, the second being quite equal in all respects except length of wing, both being birds not less than two years old, the third being a cockerel of last year.

In pairs of hens the first and second were Black, and the third Brown Reds; the awards between the two former being in the first mostly to beauty of plumage, and in the second to style and quality. Here also was a class for local competitors, and these stood well as compared with the open classes, a grand Black-breasted Red taking first, the second also being of that colour, and the third Pile. The class for Black Red in pairs lost nothing in point of merit, for the first-prize pair left little to be desired, and were closely pressed by the other winning pens. The first in the variety class for Game were Piles, the cock being a bird we have seldom seen equalled, and certainly never seen excelled; the second being capital Duckwings, and the third also Piles. Only one class was devoted to all other varieties of Bantams, but if worthy of any encouragement two classes ought certainly to be given, and in this case not one pen was unworthy of notice, and five prizes were awarded, the first to Silver Sebrights of pure ground colour, the second to Blacks, the third to Pekin, the fourth to Blacks, and fifth to Golden Sebrights. The Turkeys were all of the Cambridge variety, but in *Geese* the first were Whites, and the rest Toulouse.

Aylesbury Ducks were very good in both beak and plumage for the time of year; but, on the contrary, the Rouens were faulty, though very large. In the class for Ornamental Ducks every pen was noticed, the first being Bahamas, the second Whistlers, and third Mandarins.

There was a mixed local class, in which a good pair of Spanish stood first, and Buff Cochins and White Dorkings respectively second and third.

The whole of the Pigeon classes were well patronised, and the quality of the birds almost uniform, Mr. Horner carrying off sixteen out of the thirty prizes offered. In both classes of Carriers Duns won the first, and Blacks the second; and in Tumblers the first were Almonds, and the second Black Mottles. A well-developed pair of Black Barbs stood first in their class, with good Yellows second. The winners in Owls were White and Blue foreign respectively, and these were exceedingly neat. Faintails were a good class, and well placed. The Turbits were a very good class, Blues being first and Yellows second. In Antwerps the first was carried off by a good pair of Short-faced Duns, and the second by Blue Chequers; and in Magpies Red and Yellow won the prizes.

In Rabbits, the Lop-ears were very poor, but the three Angoras were perfection. Of Silver-Greys there were five entries of nice specimens, the first being won by a most perfectly-silvered animal, the Himalayan also being good in marking; and in the Sale class a nice Dutch was first, and an Angora second.

GAME.—Cock—1, C. W. Brierley, Middleton. 2, J. Fletcher, Manchester. 3, J. A. Winstanley, Preston. *he*, R. Payne, Burnley; G. Bohand, Burnley. *Hens*—1, C. W. Brierley. 2, J. Buller, Chatterbox.

GAME.—Within three miles of Accrington.—Cock—1 and 3, Morris & Wood, Accrington. 2, J. Smith, Accrington.

GAME.—Black or Broken Reds—1, C. W. Brierley. 2, W. Watson, Nantwich. 3, T. Tomlinson, Bury. *Any other variety*—1, E. Aykroyd, Eccleston. **DORKINGS**—1, W. H. King, Rochdale. 2, J. White, Northallerton. 3, J. Stott, Healey, Rochdale. *he*, S. H. Stott, Preston.

COCHINS—*Buff or Cinnamon*—1 and 2, W. A. Taylor, Manchester. *Any other variety*—1, T. Aspin, Church. 2, W. A. Taylor. 3, R. S. S. Woodgate, Tonbridge Wells. *he*, T. Stretch, Ormskirk; W. A. Taylor; A. Bamford, Middleton. c, H. Frankland, Church.

SPANISH—*Black*—1, J. Powell, Bradford. 2, H. Beldon, Bingley. 3, J. Leeming, Broughton, Preston. *he*, J. Bowness, Newchurch; Pickering and Dugdale, Driffield (2); Leeming, c, H. Wilkinson, Skipton.

BRAHMS—1 and 2, F. F. Ansdel, St. Helens. 3, H. Beldon, Bingley. *he*, G. Barnes, Blackburn; H. Feast, Swansea.

HAMBROGS—*Golden-pencilled*—1 and *he*, H. Beldon. 2, G. & I. Dockworth, Church. 3, W. Driver, Keighley. c, G. Kidson, Thirsk; H. & A. Gill, Rawtenstall. *Silver-pencilled*—1, H. Beldon. 2, J. Bowness, Newchurch. 3, H. Smith, Keighley. *he*, J. Highton, Chaburn; J. Webster, Kelso; H. & A. Gill, H. Beldon. 3, Rhodens, Accrington.

HAMBROGS—*Goldens-pangled*—1, W. Driver, Keighley. 2, H. Beldon. 3, G. & J. Duckworth, Church. *he*, N. Marlor, Denton, Manchester; G. & J. Duckworth. c, J. Newton, Asden; E. Collinge, Middleton. *Silver-spangled*—1 and *Cup*, H. Beldon. 2 and 3, J. Fielding, Newchurch. *he*, Ashton & Booth, Mottram; J. Altham, Baxenden; H. Beldon. c, H. R. Platten, jun., Fakenham; H. Frost, Swansea.

HAMBROGS—*Black*—1, N. Marlor. 2, H. Beldon. 3, J. Bowness. *he*, J. Smith, Clatford. c, Walker, jun., Denton; J. Moore, Bingley.

FRENCH—1 and 3, J. H. Fielding, Walsden. 2, G. W. Hibbert, Hyde. *he*, J. Leathes, Fakenham; J. Johnston, Pleasington; H. Feast, Swansea.

POLAND—1 and 2, H. Beldon. 3, J. Mannall, Leigh. *Any other variety*—1, A. G. Brooke, Salford. 2, G. Anderton, Accrington. 3, E. Walton, Rawtenstall.

SELLING CLASS—1, J. Leeming. 2, A. Bamford. 3, W. Perrin, Nantwich. *he*, J. Powell, Bradford; G. H. Hibbert, Hyde; Stott & Booth, Bury; G. Fletcher, Didsbury; W. K. Watson, Church; E. Walton, Rawtenstall. c, R. J. Edleston, Bowdon.

GAME BANTAMS—*Cock*—1, W. F. Entwistle, Westfield. 2 and 3, W. F. Addie, Fulwood. *he*, W. Rogers, Sunderland; J. W. Morris, Rochdale. c, W. Gray, Darlington; W. Adams, St. Clements. *Hens*—1, W. F. Addie. 2, W. F. Entwistle. 3, G. Booth, Haslingden. c, P. E. Furness, Rawtenstall.

GAME BANTAMS—*Within three miles of Accrington*—*Cock*—1, J. Thompson, Church. 2, J. Smith, Accrington. 3, W. & H. Furness, Accrington. *he*, G. Anderton. c, G. Riley, Accrington; J. Woods, Accrington.

GAME BANTAMS—*Black Reds*—1, T. Barker, Burnley. 2, J. R. Robinson, Sunderland. 3, W. F. Entwistle, *he*, W. Baskerville, Manchester; W. F. Addie. *Any colour*—1, T. Barker. 2, W. F. Addie. 3, P. E. Furness, Rawtenstall. *he*, W. F. Entwistle, Westfield; W. K. Watson, Church; W. Gray; J. R. Robinson. c, A. Barton, Haslingden.

BANTAMS—*Any variety except Game*—1 and 5, E. Walton. 2, Pickles and Whitaker, Edendish. 3, W. F. Addie. c, W. A. Taylor. *he*, R. H. Ashton, Mottram, Manchester; E. Walton. 4, R. P. Edleston.

TURKEYS—1, C. W. Brierley, Middleton. 2, F. E. Rawson, Halifax. 3, T. Holden, Haslingden. c, E. Lord, Bacup; T. F. Greenwood, Darwen.

GESE—1, J. Walker, Rochdale. 2, T. Statter, Whitefield. 3, — Green, Claydon-Moors. *he*, S. H. Stott, Preston.

DUCKS—*Aylesbury*—1 and 2, J. Hedges, Aylesbury. 3, J. Walker, Rochdale. *he*, C. Holt, Rochdale. *Rouen*—1, A. Haslam, Wigan. 2, A. West, Worsthelm, Burnley. 3, J. Scollson, Newport-le-Willows. *he*, W. Penny, Preston; J. Newton, Silsden; T. Statter, Whitefield. *Any other variety*—1, W. Burns, Fodsey. 2 and 3, H. B. Smith, Preston. *he*, W. Burns; H. B. Smith (2).

ANY VARIETY EXCEPT GAME AND GAME BANTAMS—*Within three miles of Accrington*—1, J. W. Furness, Accrington. 2, G. Anderton, Accrington. 3 and c, H. Frankland, Church. *he*, W. G. Holt, Church.

PIGEONS.

CARRIERS—*Cock*—1 and 2, E. Horner, Harewood. *Hens*—1 and 2, E. Horner. **TUMBLERS**—1 and 2, E. Horner.

BARBS—1, J. Fielding, Rochdale. 2, A. Justice, Salford.

OWLS—1 and 2, J. Fielding, jun., Rochdale.

POINTERS OR CROPPERS—1 and 2, E. Horner.

FANTAILS—1, J. F. Lovelace, Newark. 2, E. Horner.

TURBITS—1, W. Sutcliffe, Burnley. 2, W. Kitchen, Blackburn.

DRAGONS—1, J. A. Ford, Conington. 2, T. Charnley, Blackburn.

TRUMPETERS—1 and 2, E. Horner.

JACOBS—1, W. Dagdale, jun., Burnley. 2, E. Horner.

DUNS—1 and 2, E. Horner.

ANTWERPS—1, J. Crosland, jun., Wakefield. 2, R. Brierley.

MAGPIES—1 and 2, E. Horner.

ANY OTHER VARIETY—1, W. Kitchen, Blackburn. 2, R. White, Manchester.

RABBITS.

SPANISH—1, T. Hare, Blackburn. 2 and *he*, J. Gatecliffe, Southport.

ANGORA—1, G. C. Hulton, Bradford. 2, J. W. Haring, Burnley. *he*, S. Buckley, Healey.

HIMALAYAN—1, S. Ball, Bradford. 2, G. C. Hulton. *he*, S. Ball; S. G. Hudson, Hull.

SILVER-GREY—1, S. Ball. 2, J. Boyle, jun., Blackburn. *he*, G. F. Hardman; J. Irving, Blackburn; J. Boyle, jun.

ANY VARIETY FOR SALE—1, H. E. Gilbert, Rugby. 2, S. Buckley. *he*, W. Higham, Middleton.

The Judges were for *Poultry* and *Rabbits*, Mr. E. Hutton; and for *Pigeons*, Mr. W. B. Tegetmeier.

MANAGEMENT OF AUSTRALIAN GRASS

PARAKEETS.

THESE birds should be fed on millet seed, Canary seed, watercress, groundsel, and chickweed. They do not require a very warm temperature, and will breed freely out of doors during the months of April and May if kept from draught. The best cages, which we can from experience highly recommend for these birds, are those manufactured by Mr. Joseph Groom, 249, Great College Street, Camden Town, N.W. Grass Parakeets, like most of the Parrots, vary in their taste for bathing, and therefore, if they seem disposed to bathe, it is as well to give them some water in a tin bath, but bathing should not be forced.

If they are likely to breed, either the fibre of the cocoa-nut or the shell itself cut in half should be fastened in some accessible part of the cage, but of course the nut must be taken out first. There is no difference in the plumage nor size of male and female Grass Parakeets, and the only distinguishing mark between the sexes is that the male has a bright blue line round the nostrils, which is very bright in the breeding season, while the female has only a pale yellowish line in the same place.—F. W.

THE RABBIT CLASSES AT THORNEY.—We have had forwarded to us a schedule of prizes for this coming Show, and think little is required to be said to recommend it to the notice of exhibitors, for there are seven classes exclusive of the selling, and a liberal prize of 20s. first, 10s. second, and 5s. as third; and the moderate entrance fee of 2s. 6d.

APIARIAN MEMORANDA.—No. 1.

As the busy time of the year for all bee-keepers is now fast approaching, if not actually come—but this is a very late year—it will not be out of place to remind our apiarian readers of some of the most important points to be attended to. They will bear iteration from an English bee-keeper's point of view.

1. Have everything ready for use in good time—bee dress, gloves, hives, floorboards, supers, &c.

2. Let all old hives which are to be used again be well washed and sweetened by exposure in the open air.

3. Decide beforehand which hives are to be allowed to swarm and which not, and treat them accordingly.

4. Hives not to be swarmed should have plenty of entrance-room, and good-sized but shallow supers (say 6 inches deep) set over them at the proper time, with a good-sized hole at top not less than 2 inches in diameter. As these supers get filled, introduce ekes without top boards of 2 or 3 inches in depth, the exact size of the super in length and breadth. Secure these ekes to the supers by means of hooks and eyes, or by screwing slips of wood on each side. If the hive itself is small, add a similar eke at bottom, so as to increase the queen's breeding space, and so enlarge the honey-gathering population of the hive.

5. In the case of stocks that are to be permitted to swarm, give smaller supers, also at the proper time, to afford space and opportunity for the storing of surplus honey, and for the comfort of the bees till they are ready to swarm. If the stock hive is small it will not be amiss to add a narrow eke soon after the bees have taken to the super.

6. Whether the swarm when it issues be a natural one or one

artificially formed, as soon as hived place it where the parent hive stood, removing the latter to a new stand. This practice is now universally recommended by all bee-masters of note both in Great Britain and America. It has had the test of twenty-five years' experience—a great satisfaction to the discoverer—your humble servant, an intelligent reader! It insures a magnificent swarm; it checks all undue swarming; it will generally add a super or two in good seasons to the stores of the wise bee-master who adopts it.

7. The proper time to add supers is just when the hives are full of bees and brood, and begin to gather outside at evening, finding the stock inconveniently crowded and hot.—B. & W.

HIVES.

Your valued contributor, Mr. Bevan Fox, has evidently mistaken the purport of my remarks at page 347. They were written neither with reference to the storifying or collateral system, nor to the use of large hives in general, but entirely and exclusively with reference to the employment, when swarming is allowed, of large hives of simple construction, *alias* big straw skeps, measuring 16 or 18 inches in width by 12 in depth, or even more. Consequently inferences based on results obtained from large bar-boxes and supers are beside the mark and prove nothing.

The system of Mr. Pettigrew, I understand, is that of our grandfathers, and consists simply in allowing the bees to swarm, and then lodging the cast in a straw skep. If there be any peculiarity or special property in the system it is the great size of skep used. Now, I affirmed, and I still maintain on better than mere theoretical grounds, that skeps of the dimensions given are not, and never will be under the simple swarming system, suitable for all localities. They have been tried and found wanting. Mr. Bevan Fox may think a skep measuring 12½ inches by 10½ absurdly small, but it is large enough to allow of 35 or 40 lbs. of honey being stored, and an ordinary swarm can do this in the course of a moderately favourable season. Large skeps are proverbially late in casting, and if the swarms do not come off till the season is advanced they are generally worth little. Some districts, from the method of farming followed, are almost destitute of white clover, and others are far from heather. In a district six miles north-east of my residence every effort to cultivate bees has failed. If a hive well found in honey is planted down in it in spring, it will, through the season be favourable, be at the verge of starvation before Christmas. Again, in another district about the same distance on the opposite side of my residence, any novice with skeps chosen at random can obtain good supplies of honey. But in poor districts the largest skeps, though populous, yield small results, and I think I should be put in possession of better evidence than a mere *ipse dixit* to convince me of a wide-spread conversion in Scotland in their favour.—R. S.

DRIVING BEES FROM FRAME HIVES.

Last year I wrote to you respecting some frame hives in which the combs had been built crooked. You were good enough to advise me to make an artificial swarm in May by driving out the bees, and then at the end of twenty-one days to arrange the combs properly. I endeavoured to effect the first part of the operation a few days since, but after rapping constantly and vigorously for at least half an hour, the bees gave no sign of commencing the ascent, and I therefore gave up the attempt. I have often driven bees from box or straw hives, with or without brood, without difficulty. Is there any particular plan to be adopted in the case of frame hives? because it seemed to me that, owing to the combs not being in contact with the sides of the hive, it was impossible to jar them sufficiently to frighten the bees. I was obliged, therefore, to stupify them, notwithstanding what you urged against it. The hives were not very full, but there were drones. Would it be likely that there were any young queens coming forward? If not, as the fumigating occupied some time, and I was obliged to take off the crown-board, I am fearful lest the eggs may have become chilled. Is it common for the bees not to build the combs straight in the frames?—L. C.

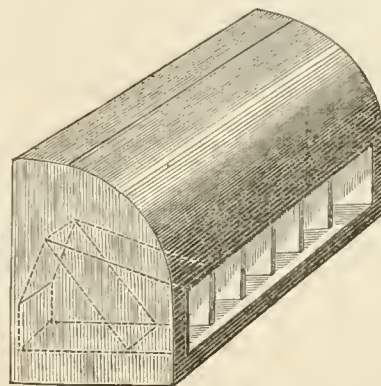
[We have seldom had to perform this operation of driving with frame hives, as we always secure straight combs; but in box hives, when we have experienced any difficulty in inducing the bees to ascend, we have placed a roll of smoking rag in a box or bucket underneath the inverted stock, leaving open the central aperture in the crown-board. The smoke gradually percolating through the combs soon causes the bees to be on the move. We always drive into an ordinary straw butt, rarely taking the trouble to wrap a cloth round the place of junction, and, being well protected, taking no heed of the flying bees. We find bees ascend more readily than if the two hives are tied closely together. A strong colony will be more easily driven than a weak one. Your hive not being full of bees, it is hardly likely that there would be any young queens coming forward. Unless very

cold at the time you performed the operation, in which case you ought on no account to have attempted it, we should hardly imagine the eggs or brood could have been chilled. Unless some trouble is taken in attaching guide-combs or applying a narrow rim of melted wax along the centre of the bars, there is no dependence to be placed on the bees constructing their combs straight; and, after taking every precaution, it is advisable for the bee-master to inspect his hives a few days after their being peopled, taking out each comb and rectifying any irregularity at once. It is a very good plan to alter the order of the combs when replaced. Should any by this means come into contact, on the next occasion of removal pare away any projections where they may have been united by the bees, again altering the position and order of the combs. By following this plan you may insure having perfectly straight-combed frames.]

BEE TRAP.

How shall I get the bees out of my super? This is a question that crosses the mind of most bee-keepers when their supers are ready to be taken off. There are several plans recommended and tried, but each is attended with a great deal of trouble, and loss of time and honey, &c. There has always been a want of something to lessen this difficulty, and that something is supplied in the form of a bee-trap, which has been invented and made by a man named Aston, whose traps bear his name. They are made to allow the bees to pass out from the super without the possi-

bility of returning to rob it. The following is an illustration of the bee-trap.



It has six openings to let the bees out; each opening has a trap or fall closing after the bee has passed, and that prevents returning. The trap is secured to the front edge of a board that has a groove cut to correspond with the opening in back of trap, and continued part of the way across the board. When, early in the day, the glass or super is taken off the hive, placed on

the board over the groove, carrying it a little distance and making it quite dark, admitting no light but at the entrance; then, without any more trouble or watching, the bees will pass out and fly back to their hive, leaving their super in a short time quite free of bees.

[We have examined Mr. Aston's bee-trap, and consider it to be an admirable contrivance, and well worth a trial. The bees have every facility for departure, but cannot return. It is much on the principle of those simple contrivances by which Pigeons can enter their lofts after a period of liberty, but are unable to fly out again. We shall certainly make use of it ourselves this summer, and report our success in due time. The inventor is Mr. R. Aston, Upper Bar, Newport, Salop.]

FIXING COMBS—WINTER VENTILATION.

PLACE the frame on a board, fit the combs (right way up wards), into the frame. The combs touching each other in three or four places, melted wax is then dropped on to the junctions and at intervals round the frame. I can by these means dispense with clips of wood or zinc, and the smallest pieces of comb can be utilised. Worker comb is usually too valuable for supers, and should not be put in the same frame with drone comb. I have ventilated my stocks this winter, and had no trouble from dampness, by putting a piece of perforated zinc about an inch square over the feeding-hole, and covering with a straw cap. Perhaps this may interest "LIGURIAN."—C. A. J.

WAX AND HONEY.—According to Wagner, Corsica produces the largest quantity of wax of all the countries of Europe, if not in the world. In ancient, as well as in mediæval times, the inhabitants paid their taxes in wax, and supplied 200,000 lbs. annually. Since wax is to honey, in quantity, as 1 to 15, the Corsicans must have gathered each year 3,000,000 lbs. of honey. —(*English Mechanic*.)

DANDELION FOR HOPS.—Woodsage (*Tenerium*), so abundant in the hedges, is more like hops. It may be used as hops green or dried. Sugar added to nettles or hops improves beer, or may be

used alone with woodsage to make beer as good as, and cheaper than from malt. It is largely used at Burton.—R. H. W.

OUR LETTER BOX.

LIGHT BRAHMA'S PLUMAGE (B. B.).—The creamy tinge you mention on the plumage of a Light Brahma cock is not fatal to his merits, more especially if, as is usually the case, it is confined to the saddle. This shade is the bane of all the white breeds. It is not the inevitable result of age, nor is it sufficiently important to induce us to discard a bird if thoroughly good in other respects.

EGG-PRODUCERS (L. F. E.).—We are not fond of the White Leghorn. The Spanish and Crève-Cœur lay the largest eggs of any fowls we know, and they lay them at the smallest cost. If there be a fowl especially sent to lay in the winter it is the Crève-Cœur. When eggs are sold by weight, as they will be some day, Crève-Cœur and Spanish will go up. The difference is great where in a cookery-book you read a certain dish requires four eggs, whether they are Spanish or Hamburg eggs.

GOOSE SITTING TWICE (A. W.).—You may let your Goose sit again if she desires to do so. The period of incubation is a period of rest, and every year we are supplied through the winter with tender Geese from second clutches. It is possible the hen eats her eggs. If she is in the condition you name she must lay.

PROMOTING DUCKLINGS FATTENING (F. C. H.).—If you mean your Ducks to grow fast you must begin feeding at once. Let them have plenty of good oatmeal in a shallow vessel, and some raw meat chopped very fine. We do not care to give them much liberty during the first fortnight of their lives, not such liberty as consists in running about fields—merely such as they get in semi-confinement, but at a fortnight or three weeks old they may have a daily run for an hour or two, not more. They should then be shut in a small place—an old pigsty is a very good one—and fed on ground oats mixed in water and raw flesh, or soaked greaves. The run may be, at this time of year, from seven till nine.

HENS LAYING UNMATED (E. C. B.).—All the use of the cock is to fertilise the eggs, he has nothing to do with laying them. We take especial care our hens shall not get out, and there is no cock near the hens under rips with chickens; but we frequently take eggs out of the rips, and they are laid as regularly as possible. With every egg the hen lays her affection for her offspring diminishes, until at length she becomes a very *matrone*, and receives her till-then idolised chickens with more kicks than kisses. We transfer her then to the ordinary run, which suits her better.

CHICKENS DWINDLING (A. D. C.).—As you reared eighty-four chickens out of eighty-six hatched you have little to complain of, and need hardly ask of what disease the "unhappy two" died. One of the best practical ornithologists we ever knew gave it at his experience, after fifty years' close observation, that one bird in four of all hatched in the world always died. We agree with him. Children's complaints, and the junior evils the flesh is heir to, carry them off, and this in spite of good food and every care. It is against our habit to hide behind generalities, and we therefore tell you that the symptoms you describe are those of chickens suffering from parasites. They are probably the darlings of two broods, and "brandy would not save them." The disease is the result of bad constitution, and were they as strong as their brethren they would pull through the attack. You are very little over the most favoured town in England according to the bills of mortality, and you must "rest and be thankful." Nothing can be better than your feeding.

HENS NOT SITTING (Elstree).—We cannot understand why your hens do not sit, unless it is that the weather is unfavourable to maternity in any respect. Do not be impatient; they will soon ask you for eggs. When we went into our house this morning and saw the ruffled Friesland hens, and heard the "cursing and swearing" there was when we disturbed and turned them out, we wished they were like yours.

"Tout vient, a qui sait attendre."

RAILWAY ERRORS (T. S.).—The death of your bird owing to the railway officials' mistake is very annoying, and if you could prove who was in error you might recover the value of the bird from the company who employed him.

ERWORTH SHOW.—Mr. S. Ball informs us that he won the first prize for Himalayan Rabbits.

MARKING YOUNG PIGEONS (H. F.).—We have often found great difficulty in marking Pigeons. Fearing to injure their legs, we have tied round them wools of different colours, making a note as to what each colour meant, but the wool in time came off when the birds bathed. Then we cut the tips off from one of the feathers (first, second, third, &c.) of the wings, making a note also of the why; but the feathers were lost in moulting, neither could the birds so marked be exhibited. Our trouble was at one time very great, as we kept a large number of Fantails of the same colour. Your idea of something to snap on the legs made of steel, each one bearing a number, is an excellent notion, but we know of none as yet in the market. We suggest this plan to Mr. Crook.

VALUE OF OLD PIGEON BOOKS (Top Sawyer).—Girton's was published after the Treatise, the authorities at the British Museum think as late as 1800. We incline to the belief that it was somewhat earlier. It is much more common than the Treatise. We have bought three copies at different times at one shilling each, and in good preservation. Each copy was picked out by us at old bookstalls. The Treatise is much rarer, and we have never been able to get a copy. Still it may be bought, as friends of ours have done so. There is one edition on large paper, which is much more valuable and much better got-up; yet this we have known bought for a mere trifle. The most rare is Moore's "Columbarium," which few indeed possess. It is not the first of the series. It has no pictures and the letter-press is brief, but it was the first of the series. The rank thus—Moore, a first edition; Treatise, second edition of Moore with improvements; Girton, third edition enlarged and improved. All these old books are more valuable now than Pigeons are more highly thought of. If you want to sell your books, offer them in our columns to the highest bidder.

"For the value of a thing
Is just exactly what 'twill bring."

RABBIT'S FUR COMING OFF (A. Young Reader).—Your Rabbit seems to be troubled with the mange or scurf. Sprinkle the parts affected with flour of sulphur; and if not removed by this application, soak for two or three hours half an ounce of Limerick roll tobacco in half a pint of hot water, and when cool apply to all parts affected every day for three days—the eyelids, nose, and roots of ears if troubled, which is frequently the case. When a Rabbit is suffering from this rather tedious complaint except taken in time—and all Rabbits kept in close ill-ventilated hutches are liable to it—remove all others from it, and wash all feeding dishes and whitewash the hutch to avoid contagion.

FEEDING PARROT (C. D.).—We should advise you to give the grey Parrot the cold soaked bread and milk two days running, on the next the rice boiled in milk, and on the fourth day the soaked Indian corn. In addition to this a small quantity of hemp and Canary seed mixed should be put in a separate tin every day, and a little fresh water in another tin in its cage. We should also occasionally give it some watercress, a radish, or a piece of raw potato, and sometimes a nut or some orange; but it should never taste pastry, meat, nor, in fact, anything that has fat in it.

BEES IN TAYLOR'S BAR HIVE (Miss B., a Subscriber).—Hive your swarm into the lower of Taylor's bar-hive boxes, and put on a super as soon as the bees have pretty well filled the hive. If you put the swarm in place of your actual stock, removing the latter to some other stance, you will have a very large swarm, on which you may put a super in three weeks' time, and get a good deal of honey. The old stock will probably not swarm again.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.		IN THE DAY.							
			Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature.	
	Barometer at 32° and Sea level.		Dry.	Wet.			Max.	Min.	In sun.	On grass.
1873.	Inches	deg.	deg.			deg.	deg.	deg.	deg.	In.
May.										
We. 14	30.225	46.2	42.6		N.	55.8	55.1	56.1	76.8	81.5
Th. 15	30.085	47.5	43.0		N.W.	52.6	52.0	41.3	110.8	86.6
Fri. 16	29.999	49.9	45.6		E.	52.4	57.8	58.1	105.6	84.8
Sat. 17	29.675	58.9	47.1		N.E.	52.3	61.0	42.0	110.4	89.0
Sun. 18	29.644	48.2	47.2		N.	52.2	53.3	45.6	68.3	46.1
Mo. 19	29.948	45.4	42.2		N.	53.9	56.1	41.8	101.5	41.8
Tu. 20	30.335	50.0	44.0		N.	49.8	62.2	32.9	108.2	29.6
Means	29.975	48.8	44.5			52.0	58.1	39.7	97.4	56.9

REMARKS.

14th.—Fair all day, very bright at times, but very cold compared with Monday, the 12th.

15th.—Fair, but dull morning; fine afternoon and evening.

16th.—Rather dull morning; very fine, though cold the after part of the day.

17th.—Very fine till noon, then cloudy; rain at 3 P.M., but not heavy till between 5 and 6 P.M.; rainy the remainder of the day.

18th.—Dark and dull in morning, a few gleams of sun between 11 A.M. and noon, but a dull day; sprinkles of rain during the after part.

19th.—Dull and cold all day, a little sunshine between 5 and 6 P.M.; very bright starlit night.

20th.—A very beautiful day, much sun, and the air much warmer than it has been lately, though still cold for the time of the year.

A cold dull week, except the last day, which was very fine; temperature about 6° below the previous week, and much below the average.—G. J. SYMONS.

COVENT GARDEN MARKET.—MAY 21.

MODERATE business transactions are current, with a tendency to lower prices, as the supply is well kept up. Importations continue heavy, and further advices mention a large addition being made to them in the event of a few days of fine weather setting in.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	sieve	3	0 to 5	Mulberries.....	1	lb.	0	to 10
Apricots.....	doz.	2	0	3	Nectarines.....	doz.	0	0	0
Cherries.....	1/2 box	3	0	6	Oranges.....	100	4	0	10
Chestnuts.....	bushel	0	0	0	Peaches.....	doz.	15	0	30
Currants.....	4 sieve	0	0	0	Pears, kitchen.....	doz.	1	0	8
Black.....	do.	0	0	0	dessert.....	doz.	6	0	18
Figs.....	doz.	6	0	10	Pine Apples.....	lb.	8	0	12
Filberts.....	lb.	0	0	0	Plums.....	4 sieve	0	0	0
Cobs.....	lb.	2	0	6	Quinces.....	doz.	0	0	0
Gooseberries.....	quart	1	0	2	Raspberries.....	lb.	0	0	0
Grapes, household.....	lb.	6	0	12	Strawberries.....	1/2 oz.	6	0	1
Lemons.....	100	6	0	10	Walnuts.....	bushel	15	0	30
Melons.....	each	6	0	12	ditto.....	100	2	0	2

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0	6	Mushrooms.....	potl.	0	to 2	0
Asparagus.....	100	3	0	6	Mustard & Cress.....	paquet	0	2	0
French.....	6	0	12	0	Onions.....	100	4	0	10
Beans, Kidney.....	100	1	0	2	Pickling.....	quart	0	6	0
Beet, Red.....	doz.	1	0	3	Parsley per doz. bunches	0	0	4	8
Broccoli.....	bundle	0	9	1	Parsnips.....	doz.	0	0	1
Cabbage.....	doz.	1	0	1	Pears.....	quart	2	0	6
Caulicums.....	100	0	0	0	Potatoes.....	bushel	6	0	9
Carrots.....	bunch	0	6	0	Kidney.....	do.	0	0	0
Cauliflower.....	doz.	3	0	6	Round.....	do.	0	0	0
Celery.....	bundle	1	6	2	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	6	4	Rhubarb.....	bundle	0	6	1
Cucumbers.....	each	0	6	1	Salsafy.....	1 bundle	1	0	6
Pickling.....	doz.	0	0	0	Savoy.....	doz.	2	0	1
Endive.....	doz.	2	0	0	Scorzonera.....	1/2 bundle	1	0	1
Fennel.....	bunch	0	8	0	Sea-kale.....	basket	0	0	0
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	3	0
Herbs.....	bunch	3	0	0	Spinach.....	bushel	2	0	9
Horseradish.....	bundle	3	0	4	Tomatoes.....	doz.	2	0	3
Leeks.....	bunch	0	9	0	Turnips.....	bunch	0	8	0
Lettuce.....	doz.	1	0	2	Vegetable Marrows.....	0	0	0	0

POULTRY MARKET.—MAY 21.

TERRIBLE weather! nothing grows, and chickens are dying. This is our cuckoo note from all breeders.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	5	0	to	6	Pheasants.....	0	0	to	0
Smaller ditto.....	5	0	to	6	Partridges.....	0	0	to	0
Chickens.....	4	0	to	6	Hares.....	0	0	to	0
Geese.....	7	0	to	8	Rabbits.....	1	6	to	1
Guinea Fowls.....	3	6	to	4	Wild ditto.....	0	9	to	10
Ducklings.....	4	0	to	6	Pigeons.....	0	9	to	10

WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 29—JUNE 4, 1873.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. a.	
29	Th	Meeting of Royal Society, 8.30 p.m.	67.5	44.1	55.8	15	53 at 3	1 at 8	53 5	33 11	3	2 53	149
30	F	No real night.	68.4	44.7	56.6	17	52 3	3 8	55 6	morn.	4	2 45	150
31	S	Oxford Trinity Term ends.	69.4	44.8	57.1	16	51 3	4 8	4 8	9 0	5	2 36	151
1	SUN	WHIT-SUNDAY. [General Holiday.	68.4	45.9	57.2	15	50 3	5 8	15 9	35 0	6	2 27	152
2	M	Meeting of Entomological Society, 7 p.m.	68.9	45.1	57.0	19	49 3	6 8	26 10	55 0	7	2 18	153
3	TU	Meeting of Zoological Society, 8.30 p.m.	69.4	44.2	56.8	21	49 3	7 8	35 11	10 1	9	2 8	154
4	W	Royal Horticultural Society's Great Show [opens.	69.3	44.4	56.9	15	48 3	8 8	after.	24 1	9	1 58	155

From observations taken near London during forty-three years, the average day temperature of the week is 68.7°; and its night temperature 44.7°. The greatest heat was 85°, on the 2nd, 1834; and the lowest cold 25°, on the 29th, 1865. The greatest fall of rain was 1.62 inch.

WHAT IS THE CAUSE OF CANKER?—HOW TO SUCCEED WITH FRUIT TREES AND ROSES.



SHOULD be glad to be the means of promoting a little discussion on the cause and cure of canker, also to learn if it is the experience of your readers that the past year has been the most remarkable within the last twenty or thirty years for the development of this disease. Such is my experience; is it general? We have a lot of young trees that I planted about five years ago; some of them, although planted shallow

in the best soil that could be procured, the roots kept close to the surface, and prevented from going deeper than 18 inches or 2 feet, have yet been more or less affected from the second or third year after planting. Notably diseased are Margil, Kerry Pippin, Sykehouse Russet, Gooseberry Pippin, Rymer, Alfriston, Golden Pippin, Court of Wick, Court-Pendu-Flat, Irish Peach, Ashmead's Kernel, &c. Now, all these made satisfactory growth from the first, and having had unusually dry summers, or at least for two years, I have good reason to believe the wood was well ripened. They began, however, to show signs of canker, and grew worse year after year, despite all precautions, until last autumn, or rather this spring, when they were much disfigured—indeed, some were completely killed. The best of them, and they are few, I have regrafted with the sorts that seem to be the least subject to disease. They are Cox's Orange Pippin, which stands deservedly high, and bears when quite young; Golden Harvey; Sturmer Pippin, fruit not perfection; London Pippin, shy bearer; Dumelow's Seedling; Codlins in variety; Waltham Abbey Seedling; Tower of Glamis; Barcelona Pearmain, old trees; Devonshire Quarrenden, Early Harvest, and Flower of Kent. Strange to say, Lord Suffield is but little affected. These, with others here, stand so far pretty well. There is an Apple called the Red Wine, of very dwarf growth, and a sure bearer every year, of which I have old trees, and very free from canker; this sort is to be recommended for unfavourable situations.

What to me appears extraordinary is that of trees of the same variety growing side by side, and for aught I know worked on the same kind of stock, one is entirely free, the other completely destroyed. Can anyone account for this? It is generally said that the great causes of canker are the roots growing in uncongenial soils, going down too deeply, &c. No doubt these are causes; but how comes it that trees are affected whose roots cannot go more than 18 inches deep—nay, less than that, and which have a mass of healthy fibrous roots?

As I have already remarked, last season was exceptionally favourable to the production of canker. Here fine healthy trees 5 feet and upwards high are destroyed. It must be borne in mind that when I say the last "season," I speak up to the time of the trees breaking into growth, as I find some of them that when pruned showed little or no signs of disease are now wrecks. I have no doubt

so much wet and sunless weather as we had last year caused the wood to be soft and unripened, and that in consequence the trees fell an easy prey to any disease. What can be done? is the question. My idea is to protect them; for I believe the evil is caused at least as much by atmospheric changes as by the soil.

I have here taken up trees with perfectly healthy roots, but the heads were positive wrecks. The soil is undoubtedly unsuitable to fruit trees as a rule, as evidenced by the few stunted miserable objects which the people call their Apple trees. I am constantly being asked the reason, and I can only recommend planting varieties which are found to grow freely. Such are few, and out of the reach of the many; but if a little interest were taken by a gentleman or his gardener, with perseverance, I am convinced, fruit in plenty can be grown even in unfavourable districts. Do not be guided by lists of supposed good sorts, for I believe it is impossible to tell which to grow, except by proof on the spot. Do not be in a hurry to plant; look round you, see what sorts are thriving close at hand, and if they are not very choice, never mind, "half a loaf is better than no bread." Plant some of the most approved sorts with them; buy cheap but healthy young maiden trees, any loss will be less felt; plant them rather thickly, so that if one-half or three-fourths of them should fail it will only be a matter of time to replace them with other sorts for trial, or you may fill up with varieties which stand well. Do not be disappointed if some of them prove good trees for a few years, and in a year like the last you find it necessary to head them down and graft with others which stand the test of time. In the end you will get your place stocked with trees that will repay you for your labour and perseverance.

With regard to soil, it is of no use to enter into that subject, for it is just possible that the soil which best suits the trees is not to be had. I find great reluctance on the part of employers to allow that which is best. "Spoil my field for the sake of the garden! oh dear no. How absurd!" However, there is yet a sort of gardener's freehold; it is the sides of the highways. The fatter this soil is the better, and it is well if the scrapings have accumulated there for years. Trees here are less affected growing in such soil than when their roots are in the top spit of a pasture.

I repeat, study the varieties in the neighbourhood, and, remember, there may be a favoured spot. The question is, Is yours the same? if not, do not take it as a guide, but go to that which is most like your own. Within a few miles of me I can see fruit trees of all kinds, and canker unknown. Roses, too, thrive well; and this reminds me that I have noted that where Roses, especially on the Briar, thrive, there one can depend on fruit trees succeeding well likewise. They both like a red soil, be it a heavy clay, sandy loam, or marly loam; anything approaching peat or heavy black ferruginous clay, is detestable to them; in soils of these descriptions they are shorter-lived and far more subject to disease.

I find Roses here grow very indifferently. Although a digression I will note a case of surmounting the difficulty

of growing Roses in such a situation, and I do so because the same treatment applies to fruit trees. When I came here I saw what had been a large bed of dwarf Roses, in which I think six dozen had been originally planted, but I found only six plants with about two dozen fine Manetti Roses standing from 4 to 5 feet high. I was asked why those that were growing strongly (the Manetti) did not bloom. I could not help laughing, for the Roses had died while the stocks had thriven. (Atmospheric cause again, I doubt.) It was only a matter of time for them to be grubbed-up and cast on the rubbish heap; but, thought I, this is a chance not to be thrown away. I therefore made some dozens of cuttings out of these fine heads, and within twelve months of that date the bed was filled with a fine lot of young plants. "Bought-in from the nursery, I suppose." "No, better than them, for they may go in the same way as their predecessors; they are from the cuttings struck in the spring in rich soil and a sheltered situation, and budded in the summer with the few varieties that were found growing in the bed and a few others about the place." These now present a very fair bed. This seems to me the way to manage fruit trees, though a great variety of kinds, and some of them, perhaps, very choice, may be wanting. Rose trees are far less attacked by canker when protected by walls than when grown as bushes or otherwise.

I have a Ribston Pippin sixty years old trained against a wall; it had been badly managed, and when I came here it had formed a hedge from 3 to 4 feet high on the top of a 12-foot wall; this, of course, was soon displaced, and young wood encouraged to fill up the lower parts. The roots were not disturbed, and have an unlimited range; big bulky roots they are, and I know not how deep they are. I can answer for 4 feet, and that, too, in an unfavourable soil as can be found—they call it poison here. Yet this old tree is almost free from canker, very vigorous, and produces a good crop yearly. Five years ago I planted, with several dozen other trees, a healthy young espalier of the same sort. Everything was done to prevent its roots going deeper than 18 inches; it was provided with fresh soil and properly taken care of; yet this tree, though it grew well for three years, is eaten almost to death with canker: still, the roots are perfect.

I will give another instance—that of an old Hawthornden. Everyone knows the liability of this sort to become badly affected with canker. Singularly enough, it is almost free from it: its roots are restrained within no bounds, it has not the protection of a wall, and it bears profusely every year. The roots are extremely deep, in soil of the vilest character. How can one account for the tree's success? Is it because it requires little or no pruning? for even pruning causes canker both of the roots and shoots. Trees in well-prepared borders are certainly so badly affected this year as to be quite worthless. I enclose a branch for inspection, also roots, to show that these are quite healthy. It will be seen by the specimens that they are affected with a modification of the disease generally called canker. There is no enlargement previous to its appearance, as a rule. The first symptom is a small reddish-brown spot generally at the base of a bud; often, too, at the end where the shoot was cut, &c. Old wood does not appear to be attacked in this way, but where the disease does appear on it it is of the usual character. I wish particularly to note the peculiarity of its only appearing in the last two years' growths, leaving the older and better-ripened wood of the previous dry season's growth quite free. Can there be a better proof that the atmosphere plays a great part in inducing the disease?

The Apple is not the only tree so attacked, all others suffer more or less. Let me cite a case that puzzles me, and respecting which I should like to hear the opinion of some of your readers. It is that of some Peach trees on a south wall. They were replanted in a new border March twelvemonth, and they have thriven remarkably well since, but the shoots have all, or nearly all, died back to the previous year's wood at from 18 inches to 2 feet from the ground; from there upwards the trees are as perfect as can be. The first appearance of the evil was a small brown spot about the size of a pin's head throughout the last summer's growth; it spreads with great rapidity, and within a few days it surrounds the otherwise vigorous shoots with a black band, and of course causes death. One is led to think that in this case we may look for the cause in obnoxious gases emanating from the soil; at least I am led to believe so, or why should not the disease appear throughout the tree? The roots can have nothing to do with it, nor is the growth less vigorous at the bottom.

I will now make a few more remarks about canker to prove

that the roots alone cannot produce it. I headed-down a few rather large trees, on account of their not being prolific, or of the fruit being worthless; nevertheless, they were perfectly healthy and free from canker. One of them was grafted with several varieties three years ago, and now there is not a sound graft on it; indeed, the greater part of them died back last autumn and winter to the union with the stock. I am at a loss to account for so sudden and complete an attack. Occasionally a tree or one of its branches affected with ordinary canker will live for years if well attended to; but the form of the disease which proved so destructive here last year is rapid in its action. That sudden atmospheric changes are one great cause I have no doubt. I have found that trees which showed no signs of disease before, have, when replanted or root-pruned, been attacked in a remarkable degree. Pruning seems to produce it, particularly this season, the cut end being the only part affected. Again, if the soil is the cause, why is the disease developed in winter when the tree's vegetation is inactive? Why is it not carried all over the tree as the sap flows? Whether the beginnings of the disease are made in summer or winter I do not know, but most probably at the fall of the leaf. Certainly the most favourable time for its spread is a mild wet winter. When sharp dry winds and frost prevail it does not appear—at least, such is my experience.

Notwithstanding all drawbacks, however, I have trees, and not a few of them too, that are perfect, and which would be a credit to the person who had charge of them in far more favourable situations. I am proud to look at them. I say to all who are similarly placed, that with due knowledge and perseverance fruit can be grown in situations where success is thought almost impossible. Make a good beginning, and continue improving until you attain your end. To give up after one or two failures will not do; to fight with difficulties and overcome them, should be the gardener's ambition. To have a lot of young healthy trees and plant them in unprepared soil, cannot but disappoint; indeed, it is money and time thrown away. Employers, too, must give the gardener more scope, and let him have what is necessary. Where the situation is unfavourable, after one lot of trees has been bought it is a mistake to think that ever afterwards there will be an abundance of fruit, and that no more trees will be needed; for it is possible that in a year or two half of them should be replaced with other sorts, or more of these which are doing well will have to be planted. I was told, when engaged for this place, no fruit tree could be grown. Here are the measurements of a few ordinary nursery four or five-branched trees, planted four years last March—

	Width.	Height.	
Plums.....	14 feet 6 inches	9 feet 3 inches	Good crop.
Peaches.....	12 feet 6 inches	7 feet 6 inches	Good crop.
Cherries.....	13 feet 3 inches	9 feet 6 inches	Good prospect.
Pears.....	8 feet 9 inches	9 feet	100 fruit on it.
Nectarines..	17 feet	9 feet 6 inches	Few fruit.

Pyramid Trees.—Pears, 8 feet high; Apples, 7 feet high.

The above are a fair sample, and all of them are well furnished and pictures of health. They have been replanted or root-pruned once during the four years. All, except the pyramids of course, are on walls. What, not able to grow fruit trees! Try, good readers, try.—J. TAYLOR, *Maesgwynne, South Wales.*

PELARGONIUMS AS EXHIBITION AND DECORATIVE PLANTS.

"EVERY dog has its day," and the same may be said of every flower. At one time Hyacinths and Tulips are the rage, and a single bulb brings a fabulous price. At another time Orchids are the fashion, and fifty or a hundred guineas are readily obtained for a small specimen of a rare species. Now we wonder that our ancestors could be so foolish as to barter away fields and horses for their favourites; thirty years hence, in all probability, our successors will have a similar opinion of us in respect to the Orchid mania. Then our plant stores are overdone with "foliage;" the old-fashioned flowering plants are dethroned for plants with immense cabbaging leaves—Anthuriums, Alocasias, Begonias, &c., all very well in their way, but quite out of place in small houses; indeed, we may even be overdone with the foliage of the graceful Palms.

In the rage for fashionable flowers the subjects of this paper have been somewhat neglected, but this neglect is merely temporary, and, like "the early cloud, or morning dew," will soon pass away. The Pelargonium is one of the best decorative plants for the cottager's window, and its rich and varied hues are

equally effective in the greenhouse or conservatory. The plants are also at the present time one of the principal features at our exhibitions, and as there exhibited are compact masses of bloom, in some cases as much as 6 feet over, the marvel being that such a mass of leaves and flowers can be supported and brought to so high a degree of perfection in a pot limited to 8½ inches in diameter. The potting material is rich turfy loam, firmly compressed in the pots, yet sufficiently porous to allow the water to drain through, as the plants require an enormous supply during the latter stages of their growth. A perfect thicket of sticks is required to support the flower-trusses, which would otherwise be much damaged in their transit to and from the exhibition. Such large specimens are very well for the purpose for which they are grown, and are highly creditable to those who have the time and patience to bring them to such perfection; but I very much question if they are productive of so much real enjoyment to their owners as more humble plants are to the lovers of flowers for their own sake.

For general purposes small plants grown in 4, 5, and 6-inch pots are the most useful. Even in the smallest size compact little plants may be grown, each with a dozen or more trusses of flowers. Such plants are very useful for all decorative purposes, and the pots fit well into the small vases used in drawing-rooms.

The stage Pelargonium is easily propagated; cuttings may be taken either when the old plants are cut-down in August, or early in April when the young growths are thinned-out. I insert one cutting in the centre of a small 60-sized pot in light sandy soil, and place the pots in a frame where they have a very little bottom heat; they may be shaded during the first four days, but only lightly. In two weeks they will have formed roots, when they should be freely aired, but be allowed to remain two or three weeks longer. Each of the plants, if potted into a 5-inch pot, will produce a few trusses the same season, and will make a strong flowering plant the following year. Cuttings put in when the old plants are cut-down ought not to be rooted in bottom heat, as they are apt to rot. If they are placed on shelves near the glass in an airy pit or greenhouse, every one of them will emit roots.

The new varieties sent out within the last four or five years are a great advance on those grown previously. I will add a short list of good sorts, which will be useful to intending purchasers. Achievement, Beacon, Céleste, Charles Turner, Corsair, Example, John Hoyle, Lilacina, Maid of Honour, Mary Hoyle, Pompey, Progress, Purpurea, Warrior, and William Hoyle.—J. DECOLAS.

THE ROSES AT CALCOT.

CALCOT is three miles from Reading on the Bath road. Mr. Webb has there upwards of one thousand Maréchal Niel Roses. Many of these are at this moment (May 21st), in flower, all in the open air, and those that are coming on promise an almost endless succession.

It is well worth while making a pilgrimage to Calcot. Approaching from the public road by an avenue that rather reminds one of Christian and the lions, as the gauntlet has to be run of four magnificent bloodhounds, all dancing up and down and endeavouring to break their chains, but who would not harm anyone, Mr. Webb thinks, even if they succeeded—having rung the door-bell after this peculiar fashion—that is to say, by a timid approach having set the dogs roaring, the pilgrim will, probably, feel somewhat relieved by observing the speedy approach of the courteous owner.

Passing over all the other wonders of the place, as becomes a rosarian, the one-hundred-years-old Apple tree, the Vine five times as large as the Vine at Hampton Court, and the graveyard of Alcohol with its monumental inscription, let us proceed at once to the king of the Tea and Noisette tribe of Roses. It is to be found at Calcot under every possible character. Upon walls of all aspects, on the Manetti, on the Briar, and principally on its own roots, which is what Mr. Webb prefers, Maréchal Niel is to be found, I should imagine in unequalled profusion. From the cutting of last season which is just starting, to the king of the garden growing alone, and which might almost be mistaken for a forest tree, Maréchal Niel is to be seen everywhere, in every stage of robustness of growth and luxuriance. Mr. Webb began cutting blooms from this Rose in February last, he will probably go on cutting them until February come round again. The number of Roses in prospect might glut even the London market,

where, I believe, all Calcot produce is eagerly sought after. These Roses have no manure, with the exception of a little leaf mould occasionally put to them, no protection in winter, no very large amount of attention, and yet they are unequalled, take them altogether, for growth and produce. No doubt the marvellously stiff and rich clay in which they grow has much to do with this, and Mr. Webb has allowed, very judiciously, but little interference with successful nature. This is certainly the place to see what this grandest of all Roses is capable of under suitable circumstances. To all who would learn to grow Maréchal Niel in perfection we would say, Go and call upon the Rose king at Calcot!—A. C.

FLOWERS FOR OUR BORDERS.—No. 7.

CALOCHORTUS VENUSTUS.—SPOTTED-FLOWERED CALOCHORTUS.

THIS strikingly beautiful bulbous plant was introduced into England in 1832. This species, with several of the others, is a native of Northern California, where the winters are not much less severe than in England, and the changes of temperature even more trying than in our proverbially fickle climate. The common Tiger flower, *Tigridia pavonia*, although brought from intertropical Mexico, is nevertheless so easily grown and increased among us, that good flowering bulbs may be bought for two or three shillings a-dozen. Like the Tiger flower, the species are very impatient of wet in the winter season, and it is doubtless to the combined effects of cold and moisture at this period, and from want of protection from the autumnal rains, by which the maturation of the bulbs is hindered, that so many of them have perished.



Calochortus venustus.

Although brought from a climate where frost is by no means unknown, it is therefore not advisable to risk them in the open air during the winter months; or, if the experiment is tried, it should be only where the soil is sandy, and the bulbs at least 6 inches below the surface, and covered with a large pan or pot to preserve the soil in as dry a state as possible. Where there is the convenience of a frame to place over the bulbs, they may safely be left in the ground all the year, the protection being of course removed as soon as all danger from spring frosts has ceased.

When this plan cannot be adopted, as the bulbs generally begin to grow before it would be prudent to plant them in the open ground, it will be better to pot them about the middle or end of February, in a soil composed of sandy loam, with a portion of leaf mould, placing a little sand under and around each bulb, which should be planted about 3 inches deep, over an ample drainage of broken crocks. The pot must be kept from frost, and if the compost be moderately damp when used, but little or no water will be requisite until the leaves have made their appearance above the soil.

In May the pot may be plunged into the borders, or the entire ball of earth may be turned out, if care be taken not to disturb the roots. In following the former plan, we have the advantage of being able to remove the plant from the ground as soon as the flowering season is past, and thus protect it from rain to any desired extent; the pot can also be then more fully exposed to the sun's influence, by which the ripening of the bulb will be materially aided; and this is of so much the more importance, that we believe the whole secret of the successful cultivation of the Calochorti consists in getting the bulbs ripened at an early period of the autumn. When planted without the pot, the bulbs should on no account be dug up before the foliage has decayed; where this does not take place so quickly as is desirable, it may be greatly assisted by screening the plant from moisture in any form.

When removed from the soil the bulbs should be dried in the shade, and carefully preserved from damp and frost until the return of spring. Those which may have been planted in a pot will, however, be best kept in it during the winter, the soil being allowed to become entirely dry after the decay of the stems and foliage.

Each bulb produces one or two stems about 18 inches or 2 feet high, with linear pointed leaves, fewer in number than in most of the other species. The flowers, two on each stem, are produced about midsummer, and, unlike those of the *Trigridia* we have more than once referred to, remain expanded several days; and from the beautiful manner in which the petals are spotted with crimson and yellow stains upon a pure white ground, present, when fully open, a truly magnificent appearance. The petals of all the species are curiously bearded, either at the base or a short distance above it, as in the case of the species represented.

The genus comprises four or five other species, all very handsome plants, although the one we have figured is certainly the most remarkable. The flowers of *Calochortus luteus*, which is rather harder than the others, are yellow, beautifully spotted with brown; those of *C. splendens*, lilac; of *C. pallidus*, a pale dingy brown; of *C. macrocarpus*, purple; and of *C. nitidus*, purple; but we have never met with any account of this last-named species, and we therefore imagine that it has not yet been introduced to this country. They are all increased by offsets, and also by seed, which must be sown as soon as ripe.

Well defined as are the leading characters of most of the natural orders or families into which botanists, for convenience, have divided the vegetable kingdom, there are few of them which are not by some of their genera connected with other orders; so that, however dissimilar many of these families may at first sight appear, they all, in reality, merge into each other by almost imperceptible gradations, and form parts of one harmonious whole.

Illustrations of this truth may be readily found in the natural order, the Lily tribe, to which the genus *Calochortus* belongs. In this order, the outer whorl of floral leaves, or sepals as they are termed, are of the same colour and substance as the inner whorl, or petals, being, in other words, petaloid; and, in fact, they resemble each other so closely, that in certain genera it is difficult to distinguish them.

But in the genus under consideration, there is a departure from the type of the order; the three sepals being green and leafy, and altogether different in their appearance to the three petals, approaching in this particular the Spiderwort tribe, *Commelinaceæ*, although in other respects it agrees with the characteristics of the order in which it is placed. It is very closely allied to the *Fritillaries* and the genus *Cyclobothra*, but is destitute of the pit-like nectary at the base of the divisions of the flower, by which those two genera are distinguished.

The generic designation *Calochortus*, like so many other botanical terms, is derived from the Greek, and is compounded of *kalos*, beautiful, and *chortos*, grass. Most, if not all, of the species we possess were sent to the London Horticultural Society from California by poor Douglas, whose untimely end botanists of every land will not soon cease to deplore.—(W. Thompson's *English Flower Garden*.)

THE ROYAL HORTICULTURAL SOCIETY'S SHOW AT BATH is fast approaching. Will some one kindly suggest one or two subjects for discussion at the Congress? I know Mr. Thistleton Dyer will be glad of any subject being suggested likely to be of general interest, but we must not run into the error of the last Congress of having too many papers and no discussion. I should suggest two evening sittings in a room, not a tent, not

more than two papers each night, but each paper on the same subject; twenty minutes for the first paper, fifteen for the second; fifteen minutes for prepared speakers, ten minutes for those who send in their cards to the Chairman. The Chairman to have the power of selection in case more cards be sent in than time will admit. Prepared speakers to send in their names before the day, and not more than two to be selected, but any not selected to have the preference at the discussion as ten-minute speakers. If not opening too wide a field for scientific discussion, I should like to hear a congress debate on the proper functions of leaves, and whether they can absorb moisture, &c.—C. P. PEACH.

A FEW WORDS ON PLANTING BEDDING PLANTS.

WE are from various circumstances late this season, and instead of having planted we are merely preparing, and will scarcely do much before this appears. Many are regretting they planted out tender subjects before the sharp frost of the past week. The plants were safer than they would otherwise have been owing to the comparative dryness of the air during the frost. Owing to this our Apple and Strawberry blossoms, the latter opening nicely, have suffered little or nothing, though some Potato tops have been injured. As the bedding plants were undergoing a preparatory hardening process, they have suffered little or nothing. Now, though we are late, we shall soon make up for lost time, but not by planting in cold unprepared ground; I would rather delay a few days than plant in cold lumpy soil. Gain in time is actually obtained by delaying a little, provided by turning and turning again you can warm the soil by digging down sun-heated soil. Of course all beds and borders would have been well prepared if it had been possible to have done so earlier, but they will soon be in first-rate order.

This preparation is one of the essentials of future success, and the hint will apply to most places. Far north of London one cause of failure is planting in unprepared soil, even though there be boasting as to the earliness and celerity with which the work is done. It reminds me of the way in which I have seen some farmers treat their Turnip crop—they give the ground a ploughing and a harrowing, and then throw in the seed, and expect a heavy succulent crop. The successful Turnip-grower resorts to many ploughings, harrowings, and rollings, so that the ground may be something like an Onion bed before he deposits the seed in the drills. A little labour bestowed in turning and airing the soil of a flower bed will improve its appearance for the season.

The preparation of a flower bed must be carried out on a system. Let the ground at first be well stirred as deep as the subsoil, which also should be broken, but in general cases keep the poorest soil deepest down, and the richest at the surface. If any manure is applied let it be sweet, and be chiefly used at from 4 to 6 inches from the surface. When very fine foliage is required the manure should go deeper; when I used to grow many subtropical plants in our exposed place, I often put 1 foot or 18 inches of the hottest manure from dung and short grass at a depth of 18 inches from the surface, and it was astonishing how free the growth was. The large massive foliage did not suit this exposed windy place; the finer the foliage the sooner it was stripped into ribands. If I were practising sub-tropical gardening again, I would have a place on purpose, fully exposed to the sun, yet sheltered from cold and sweeping winds. With some exceptions such as these, all beds that are intended to produce abundance of bloom, with good yet moderate-sized foliage, should have the poorest soil farthest from the surface; the richer soil near the surface is intended to cause free growth at first, and then as the roots go deeper in the poorer soil flowering will be encouraged, and mere growth will be checked. The deep turning of the soil has this great advantage, that it renders the plants and the planter to a certain extent independent of the season, be it wet and shady, or dry and hot. In the former case the rains will pass away more readily; in the latter the roots will go deeper, and the moisture from beneath will rise more freely in obedience to the demands from the sun's rays. Two years ago I saw a small flower garden, the beds untouched previously, dug nicely over and planted at once, about the 20th of May. The plants did as well as I expected them to do, and that was not saying much. They cost five times more labour for a poor result than would have been involved in a little more preparation and airing of the beds.

Another fertile cause of want of full success is planting when the soil about the roots is comparatively dry. No future

watering in the beds will ever compensate for this. The water runs away from the dry soil and fibres just as the rain passes from the back of a healthy fowl. Be the plants in pots or planted out in beds to harden-off, one essential to success is having them well and thoroughly watered before moving them.

Another cause of a want of complete success is planting from pots when the roots are matted in a ball, and doing nothing to gently disentangle the roots at the sides of the ball, that they may enter freely into the fresh soil. Partly on this account, and partly to save labour, the great bulk of our plants are planted out in preparatory beds, and when lifted with less or more of good balls, they have the fresh roots bristling all round like a wig, ready to take hold of the soil at once. Unless in an extreme case, no fibrous-rooted plants ever have a pot with us, but sometimes we must act according as circumstances compel us. When I have brought plants forward in small pots I found it of advantage, say in the case of the finer Geraniums, to turn them out in a rich earth bed, with a little protection, before the outside of the ball became too matted, and then, after standing there for a fortnight or three weeks, the plants would rise with the ball entire, but with fine fresh fibres coming from it all round, each of which was ready at once to enter into the well-aired soil of the flower beds and borders. Those who have plants with balls matted with roots, and as firm as a cheese, will find it an advantage if, before planting, they gently with the fingers or a pointed stick break the mould-like form of the outside of the balls.

To two more common errors I will just allude. The first is planting when it is raining and the soil is wet. In stiff soils, especially, this will be a great drawback. The soil cannot be nicely worked about the fibres, and a hard-baked uncongenial surface is likely to be the result. With plants prepared as above I would much rather plant when the soil was somewhat dry and the sun shining brightly.

Much damage is often done, and especially when plants are turned out as early as the middle of May, by frequent surface-watering. At that season it will be found that the wetter the soil the colder will the roots be. On the other hand, the drier the surface soil the warmer will be the roots beneath. In planting, therefore, in rather dry soil, and with plants previously watered, I would merely secure the roots, supply them with water exposed to the sun previously, and when that has soaked in, cover all over neatly with the dry soil. In general it will be some time before more watering is required at the roots. In very bright days the foliage may flag a little, but a skiff from the syringe over the top would be more appropriate than a deluging from the surface to the roots, that were quite wet enough before.—R. FISH.

MOVING LARGE TREES.

I ONCE met a man who when anyone made a joke did not appear to see it, but some time afterwards would burst out laughing to the surprise of everyone. I was strongly reminded of this individual on reading Mr. Barron's paper in answer to one I wrote last October. If anyone read my paper he has probably forgotten it by this time. Mr. Barron quotes a single paragraph of it, and intimates that my whole argument, or, at any rate, the gist of it, is contained in the words he quotes. Now, I think this hardly fair. Again, he says I have no knowledge on the subject, and yet is surprised that I, living within seven miles of him, and having seen so much of what has been done at Elvaston and elsewhere ever since I commenced business, should have forgotten all he has done. What time he wishes to indicate as the time I commenced business I do not know; belonging to the third generation who have owned these nurseries, it follows that my connection with the business has been from the time I left school, so I think my recollection of him dates as far back as the time he commenced to move large trees. Here let me say, if I ever move large trees there is no one whose assistance I should value more than Mr. Barron's, because no one can understand it better. If I had not lived so near to the cleverest man who ever undertook to move timber trees, I might never have written the article in question, because I might have attributed any failure in results to want of skill. I remember well the Cedar Mr. Barron moved at Elvaston and many other trees, particularly large Yews, which did remarkably well; and I think no one would gather from what I wrote that I wished to convey the idea that no large tree could be removed, or that Mr. Barron, whose name I never mentioned, could not move it. Being in the habit of

saying and writing just what comes into my mind, there is a danger of annoying those who differ from me, and even in some cases of raising the cry of "Great is Diana of the Ephesians!" It is as much my interest as that of any other nurseryman to sell the largest trees I have on hand, but I always say if anyone wants good specimens of any kind of tree or shrub he cannot easily plant too small. It is not worth while repeating what I wrote in October, but my own experience fully bears out what I then wrote, and my observation likewise.

It is a very common thing to hear persons say, "At my time of life I cannot afford to wait till small trees grow." These persons always buy fine specimen plants, and, as a rule, I contend that in a few years young trees would have beaten them both in size and appearance. Twenty-one years ago part of my garden was an orchard; I planted it with Pines, Junipers, Cypressess, Wellingtonias, &c., selecting by choice to plant seedlings only a few inches to 2 feet high; and when I compare them with others, I think I have every reason to be satisfied. I am quite aware trees of large size can be removed, and those with spreading roots, such as Yews and Scotch Firs, may do well, but I have seen large Hollies and many other trees after looking well for some time gradually die-off and take years to do it in. I have no wish to hinder anyone, who likes to pay the cost, from removing large trees if he has a Mr. Barron to do it for him; but I still say I should not trust to such trees for a permanent effect, but would plant young ones amongst them at the same time.—J. R. PEARSON, *Chilwell*.

P.S.—I have just measured three trees on my grass plat all planted as small plants since the time named. *Pinus macrocarpa* is 20 feet high, branches lying on the ground in a circle of 22 feet diameter; *Cupressus Lawsoniana*, 18 feet high, 7 feet through; *Wellingtonia*, 28 feet high, branches lying on the ground 14 feet wide; this last was turned out of a quart pot in the spring of 1861. I merely give these as examples, and would ask, Would they have been better trees by this time if they had been large when planted?—J. R. P.

THE BUFFALO BERRY.

If Mr. W. Muir wishes his *Shepherdia* seed to vegetate readily, he should sow it in the open ground soon after it is ripe or during the months of October and November, but first rub or mash the pulp and wash it from the seed. On the approach of winter cover the bed an inch deep or more with dry fine muck or some light material, to prevent the earth from becoming hard and dry; this should be removed in the spring as soon as the seed begins to come through the ground. If the seed has been kept dry through the winter it will not likely vegetate until the spring of 1874.

When the young plants are a year or two old they should be planted in nursery rows from 12 to 15 inches apart, and in the course of from three to five years they will show their sex by the flower buds of the male plants being double the size of the female, when they can be transplanted in pairs from 4 to 6 feet apart for fruiting, otherwise they will not bear fruit.

My experiment as a hedge of a trial of 100 feet of the Buffalo Berry was not successful although well cared for, but it may be that it was not managed rightly. The plants were set in a single row 12 inches asunder, and when eight or ten years of age it would not keep its form, and the plants would fall out of line from one side or the other and become uneven and unsightly.—CHARLES DOWNING, *Newburgh, New York*.

WATERING CONTRIVANCES.

THE acknowledged importance of water for all cultivated plants has, I hope, induced every interested person to provide means whereby an ample supply may be conveyed to one or more parts of the garden, there to be stored up in quantity in underground tanks or open reservoirs. To economise labour in watering, as well as to secure the timely and proper execution of the work, it is very requisite to have a handy contrivance for the conveyance of water where most wanted, combining means for its application to crops, syringing plants, and for general cleansing purposes. I therefore purpose giving a few illustrations of the most substantial and useful apparatus for the purpose.

Warner's Lift and Force Pump (fig. 1).—I worked one of these years ago, and my opinion of it is, that for its particular purpose (watering), it is one of the most useful implements ever invented, and not, to my thinking, surpassed by modern

inventions. It is a pump furnished with a drawing and delivery pipe; the latter may be of any length up to 50 feet, and is generally of indiarubber. The internal work of the pump is very strong and durable, as are other portions. Being

wood, bound with iron hooping. It should be filled with the lid on, which is pierced with holes to exclude all rubbish likely to injure the working of the small pump. One man can easily work it, and it is a desirable contrivance to have. It holds

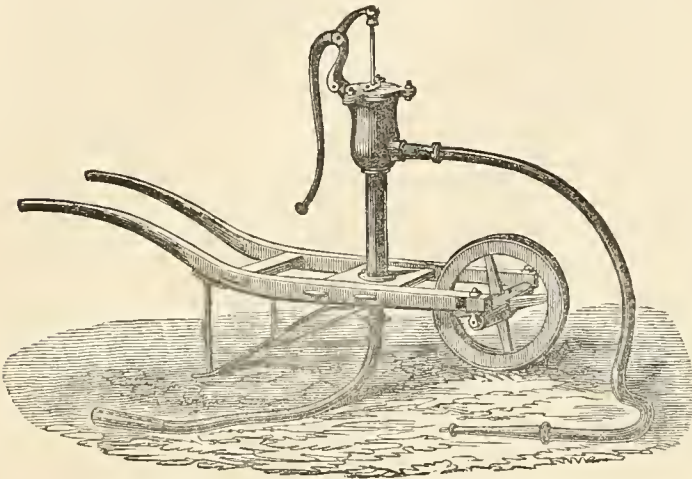


Fig. 1.—Warner's Lift and Force Pump.

fixed on a wheelbarrow frame it is moved about with ease. When any considerable length of pipe is used two men will be required to work it. It should be placed beside the tank, with the sucker inserted, and water may be distributed for rods around it.

Warner's Portable Garden Engine (fig. 2), combining the convenience for watering as regularly as if from the rose of a

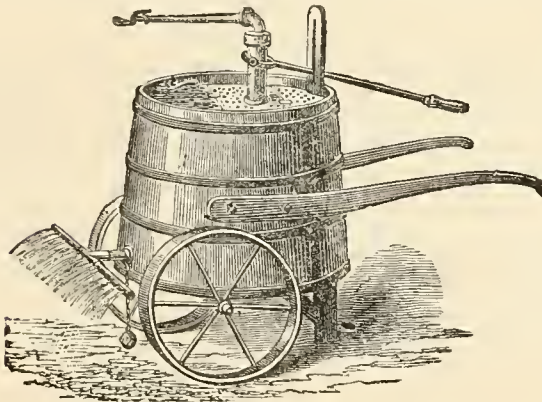


Fig. 2.—Warner's Portable Garden Engine.

watering-pot, as well as a pump with a pipe and spreader for syringing and cleaning plants and trees. When used for the

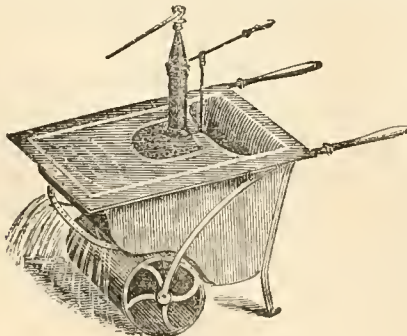


Fig. 3.—Watering and Rolling Engine.

latter purpose the water-spreader behind is taken out and a plug inserted. It has iron wheels, while the body is made of

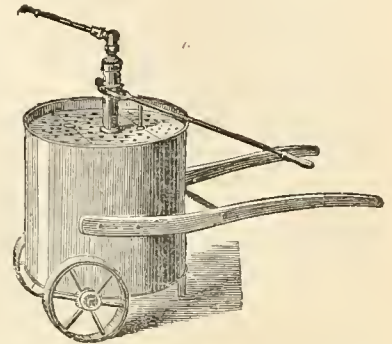


Fig. 4.—Small Tub Engine.

from twenty to thirty gallons of water, and is powerful enough to throw the water from 30 to 40 feet either in the form of a spout or fine shower.

Fig. 3 represents another form of garden engine, having the convenience for watering and rolling added to the pumping works. Its chief use, and for which it can be recommended, is that of watering and rolling fresh-laid turf, and walks and

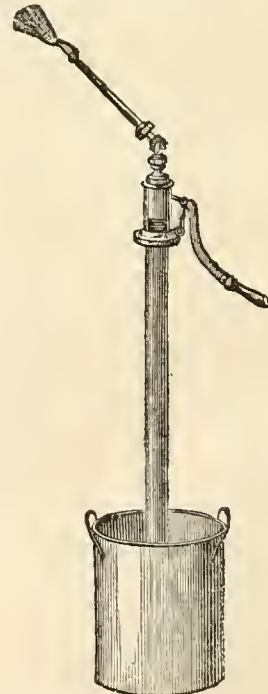


Fig. 5.—Warner's Portable Garden Engine.

roads newly gravelled, or for making a level surface to a new lawn formed by sowing seeds. Its construction is intended to effect a saving of time and labour, and of its class it is a handy machine, as each part can be worked separately.

Fig. 4 is a *Small Tub Engine*, which is very handy and useful for any garden, whether large or small. I use such an engine for syringing wall trees, as well as for cleaning plants attacked with any insect; it is easily taken to any part of the garden, and used by one individual. I believe there are others in use of a larger and stronger make, but the principle of working is

the same, and their use is for a similar purpose. They are made of iron; in some it is galvanised, and in others not; one in use here is made of wood, with a powerful pump requiring two men to work it. This is not so handy as the one figured.



Fig. 6.

They will all throw a continuous stream of water to a greater or less distance, according to the power of the engine.



Fig. 7.

Warner's Small Portable Garden Engine (fig. 5) is designed for use in the conservatories and other glass structures, and as such is to be recommended. It should be kept standing in the house charged with water, which soon becomes heated to the temperature of the house, which is an advantage when it is

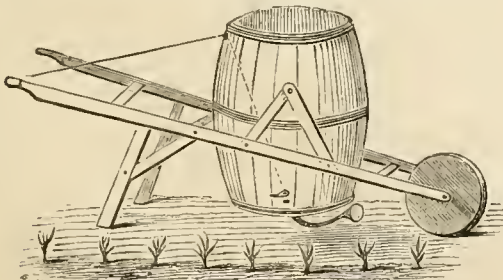


Fig. 8.—Watering Barrow.

required to be used. It is an excellent machine for the amateur as well as the gardener. The spout or delivery pipe has a regulating contrivance for as heavy or fine a shower of water as may be required. There are also several varieties of this handy instrument in use, but none, I think, that possesses any superior merit; some of them are very liable to get out of order in a short time.

Fig. 6 is a Conservatory Engine and Watering-pot combined, which is said to be capable of throwing a continuous stream of

water a distance of about 40 feet.* It is fitted with a registered spreader, and can be used as a garden engine, hand-syringe, or water-pot.

Fig. 7 is a Watering Apparatus not, I think, in general use,

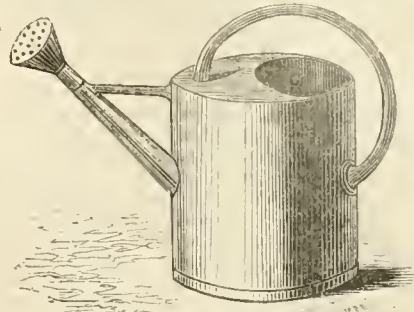


Fig. 9.—French Watering-pot.

and is designed to economise labour, and to those who prefer such a mode of watering it is useful. The application of the

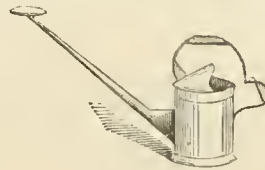


Fig. 10.

water is the easiest part of the work; in other respects I cannot see that much gain would result from its use.

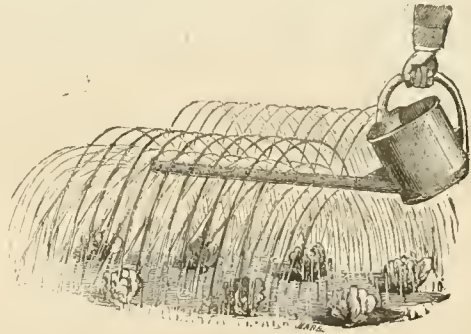


Fig. 11

Fig. 8 is a Water-Barrow of a very simple and inexpensive construction. It is an ordinary tub or barrel suspended upon



Fig. 12.

wooden brackets attached to a wooden frame with a wheel. On one side of the bottom of the tub are a spout and rose,

* For the opportunity of figuring this, as well as the watering-pots represented in figs. 10 to 13, we are indebted to Messrs. Dick Radcliffe & Co., of High Holborn.

projecting far enough to reach the plants to be watered. A plug inside prevents the escape of the water till the barrel is on the proper spot; a string connected with the plug, and attached to the right-hand side of the handle of the framework, is then pulled to let the water out, and the barrow is wheeled up the row as fast as the plants become watered. I have seen a similar barrow, but with a rose on each side, and it has the advantage of watering two rows at a time.

I come now to garden watering-pots; these are of various shapes and sizes. For the conveyance of water to plants there is none better than the common watering-pots, which are well known. They should have roses of different sizes, pierced with small and large holes; these are for ordinary watering. Then there is the small but long-spouted pot, either with or without a rose, for watering plants at a distance; while for plants on shelves close under the glass a different shaped pot is used, but being well known and in general use I need not describe any of these. I will, however, describe one which is somewhat rare, though I believe there are gardens in which this sort of watering-pot is almost exclusively used for general watering.

The French Watering-pot (fig. 9), if not invented in France, is a great favourite with French gardeners, and in the market gardens it is almost the only sort used. A friend who lives in France tells me that they are for the most part made of copper, and of course wear well and last a long time. As will be seen, the handle, which is hollow, springs from half way down the back, and passes completely over to the front part of the top; thus it is very convenient for shifting the hand in watering, and is not so likely to weary the hand as do the sharp edges of the pots in use in this country. The bodies are considered best if made flat-sided or oblong instead of round as in *fig. 9*. I am, however, by no means sure that we should consider that any advantage in this country; moreover, I should say they are more expensive. One more advantage these pots possess is that the depth of the pot is greater outside than inside by one-half or three-quarters of an inch, therefore the bottom is clear from the ground, and not so liable to wear or leak out. This is shown by the ring round the bottom of the illustration. It is an improvement worth taking up by our English makers. There are two roses to each pot, and most are made to screw on.

There are other forms of these excellent watering-pots, but with the rose inverted; the water is then delivered upwards, and falls like a gentle shower on the plants (see *figs. 10, 11, and 12*); and there are, I believe, others made with zigzag spouts,



Fig. 13.

devised to prevent the water falling on the plants and soil with force; these are generally used without a rose for small pots. The form represented in *fig. 13* is useful for watering Strawberries and other small pot-plants on shelves.

The tendency of the English makers in their so-called improvements of watering-pots is to introduce novelty rather than substantial work and advanced merit. The material is thin and very light, consequently they last but a comparatively short time.—THOMAS RECORD.

IRIS FÆTIDISSIMA VARIEGATA.

HAVING on several occasions urged on the attention of your readers the claims of plants that have a good appearance during the winter, as preferable to fill the flower beds in the immediate neighbourhood of a residence more occupied during December, January, and February than in the following three; and as it is hopeless to look, in the majority of cases, for any great display of flowers during these dark months, anything that will impart cheerfulness then has greater claims on our attention than plants that bloom when flowers are plentiful. I therefore now urge the extensive cultivation of this fine hardy plant, which is one of the most suitable I know for the purpose, and one that defies the hardest winter. The variegated form of this Iris is, like most other variegated varieties, less robust than the normal one, and it is certainly the better, for the foliage is not so lank; in fact, in the variegated form it is stiff, erect, robust, and broadly margined by a band of creamy white, which can be perceived from a great distance.

The leaves never show signs of decay until the spring is far advanced, say the middle or end of April, when the old foliage by degrees becomes shabby, and is thrown off during the next two months, the plant afterwards becoming ornamental again.

This Iris is also useful as a separate plant in the mixed flower border, and in such a position stands out prominently at a time when such things are wanted. With me it flowers but sparingly, but this is not to be regretted, as the bloom is not remarkable; but the seed-vessels in an advanced state look well in the plain green species, and when dried form no inconsiderable addition to the collection of dried floral bouquets. The bright orange-coloured berry-like seeds set in a row in their white, soft, downy bed look very pretty, the stalk being sturdy and erect.

The variegated kind seldom flowers, and if it did, all its progeny by seed would probably not have the finely-variegated character of the original; it must, therefore, be propagated by division, and though not a fast grower, it can, nevertheless, be multiplied freely. It grows all the faster if planted in good well-manured kitchen-garden soil, but in this respect it is not particular, and few plants will bear harsher treatment than this.—J. ROBSON.

MY BIRD DIARY, 1873.

THE short record I have kept of the birds which have visited my garden from time to time since the beginning of the year, may be interesting to some of your readers, and may also throw light on the contents of the Small Birds Bill, on which I see discussions raised from time to time.

I should mention that my garden consists of one acre round my vicarage, about one-quarter of which is planted with Laurels and other shrubs, with trees here and there among them, and three acres of farm garden adjoining, of which the readers of your paper had some account in 1871-72.

January, 1873.—The stock of birds living permanently on my premises, as nearly as I can ascertain, is as follows—ten couple of sparrows, four of blackbirds, two of song thrushes, eight of hedge sparrows, three of wrens, and about the same number of robins and chaffinches. There are also a few starlings, which would be inhabitants if they could, but not being able to effect a lodgment under the eaves of the house, they are obliged to live in certain hollow trees adjoining. Early in the month a flock of eight bullfinches visited the garden. They were very busy among the Gooseberries and early Plums, such as the Victoria and Rivers's Prolific. My man drew my attention to them, as the bullfinch is a rare bird here, and it is some years since it has been seen. He distrusted their motives for coming, and thought no good would come of it. I tried to persuade him that they were looking for grubs in the buds, and that, though they might destroy some few here and there in the search, the grubs would have been equally destructive. At last I yielded to his suggestions, and shot one, just to see what they were really doing. It was a hen bird, and I noticed that in this month cocks and hens came in separate parties, and not together, notwithstanding the story of this bird's constancy to its matrimonial engagements, for it is said to be the only bird which pairs for life. We opened its craw, and I regret to say that no vestige of a grub was to be discovered; the craw was full of the tender green germ of the buds of the Gooseberry and the Plum. After this I was convinced, and notwithstanding their beauty and graceful movements, I waged war upon them from that day forth. They soon became very wild, and would not let me come near them; but in all I must plead guilty to having slain a dozen up to the beginning of March. At that date the Gooseberry buds were too advanced for their taste, and the few that came after this seemed to feed principally on the buds of the Larch, and the Medlar, and the later Plums. I saw quite enough, however, to prove that the bullfinch is most rightly exempted from the protection of the Small Birds Act. He is probably the most destructive of all birds to the Plum and Gooseberry, and this season he has visited our district in extraordinary numbers. A neighbour of mine killed over thirty birds, and I heard of another man a few miles away who had killed eighty. It would be curious to ascertain if there was anything peculiar in the winter in Germany, or other parts of the Continent, to drive them over here in such unusual numbers.

February.—During this month we have been visited from time to time by bullfinches, coming three and four at a time. Some bird, I expect the sparrow, has been eating the buds of the earliest-blossoming Pears, cutting them into shreds with

his beak, and leaving them under the trees. About the middle of the month a family of "bottle tits" paid us a passing visit. They went from tree to tree, looking for insects, and, not finding any to their mind, went on. Two days after a pair of the small blue titmouse visited us in the same way.

March is not a great month for birds. In addition to my permanent stock, I saw a few yellowhammers, and at the end of the month two little creepers went over all my espaliers, searching the crevices for insects. A pair of starlings came down the chimney one morning into my bedroom, and were secured. A few bullfinches visited us from time to time, coming either singly or in pairs, but now they neglected the Gooseberries, and confined themselves to the buds of the Pershore Egg Plums, which I conclude were just in the stage to suit their epicurean palates.

April is the richest bird month in all the year. The bright little fellows who have been wintering round the Mediterranean now make their appearance. In the first week we had a passing visit from titmice. This time we had a family of the great tit as well as of the blue tit, but they only stayed a few days with us. A few days later the travellers began to arrive. On the 14th the yellow and pied water-wagtails made their appearance; on the 14th the swallow; on the 19th I saw the blackcap, the chiff-chaff, and the common linnet; on the 20th the redstart and the nightingale; on the 27th the cuckoo, and on the 29th the wryneck, or, as it is called in these parts, the cuckoo's mate.

In this month I met with another bird experience, which though it has nothing to do with my garden, may be none the less interesting to some of your readers. I was walking with my brother in the Wyre Forest, and we came upon the body of a small hawk, recently dead, which we both at once pronounced to be a cock merlin. A hawk we had neither of us ever seen in Worcestershire before. The bird was lying on his back, not a feather of his plumage ruffled, but without a head. He had been decapitated as cleanly as if it had been done with a knife. That it was a merlin we now feel certain, for about ten days after my brother found the nest on which the hen was sitting on four eggs, about a quarter of a mile from the spot where the body of the cock bird lay. He brought away two of the eggs, which are unmistakably those of the merlin, covered with deep red blotches. But what had killed the cock bird, and what had become of his head? On this subject we can only offer a conjecture. The railway passes about two hundred yards from the spot, and above it the telegraph wires, which are often so fatal to birds. In the winter woodcocks are sometimes picked up under them, and now and then a partridge, and in Scotland they are known to be so destructive to grouse and black game that the wires are covered for miles with white tallies of wood. This was probably the fate of the only merlin which had visited these parts for years. He might have been following a small bird, and in his swoop come in contact with the wire. His head, probably, fell immediately under it, while the impetus of his flight carried his body on to the bottom of the ravine in which we found it.

May brought no addition to the list of birds which have been noticed above, but now that the Gooseberries are in full leaf the damage done by the bullfinches is apparent. On many shoots there is only a tuft of green at the end. The long white branch stands out completely disbudded. I have had many of them cut out already, and I mean to have the rest done as soon as the crop is gathered, for nothing will ever grow from them again; but if the bullfinch is the great enemy of the Gooseberry, the cuckoo is its greatest friend. The abominable grub which devours the leaves always makes its appearance in May, and this year is no exception to the rule. They have shown themselves in places, but two cuckoos, which, as my man terms it, "make a good deal of time in the garden," have hitherto kept them down; we see them on the bushes, and when we examine the place, the heads only of the grubs sticking to the leaves are discovered. The cuckoos have sucked these pieces, and wisely rejected the skins.

I have nothing yet to say about the fruit-devouring birds, but if all is well, you shall have my observations upon them when the season is over. I will only mention now, that I do not think that they do their work so well as they used to do in the good old times in destroying slugs and snails. I never supposed that they did this when fruit once came in, but judging from the way in which seeds have been destroyed this spring, I am inclined to accuse blackbirds and thrushes of negligence. The framers of the Small Birds Bill very properly exempted them from protection, on account of their

fruit-devouring propensities, but kind friends have been agitating for the insertion of their names, on the ground that they do more good than harm. I would suggest to them, through your columns, that they are on their trial, and that if they do not keep down the slugs more effectually, I for one shall certainly vote against them.—WILLIAM LEA, *St. Peter's Vicarage, Droitwich*.

ORNAMENTAL PLANTING.—No. 2.

In grounds of limited extent choice specimens may be introduced very effectively alternately with flower beds in the form of an avenue, on each side of a broad walk, care being taken to maintain an ample margin of turf both to flower beds and shrubs, so that the graceful growth and various shades of green may stand out in pleasing and prominent contrast to the bright colours of the flower-masses. Let no unsightly standards mar the beauty of such a scene, but let us introduce forms that ever gain more of beauty with increasing size—forms whose lowest branches sweep the turf, from whence they taper upwards, not with a stiff and uniform formality, but with an elegance and diversity of contour that are always pleasing, and never distasteful nor offensive. It is among the numerous beautiful varieties of Conifers with which our gardens are now enriched that the most suitable plants are found for this purpose. I append a select dozen of these, and also a dozen mixed species of evergreens.

CONIFERS.

1. *Cupressus macrocarpa*.
2. *Cupressus Lawsoniana*.
3. *Juniperus virginiana*.
4. *Picea Nordmanniana*.
5. *P. nobilis*.
6. *P. Pinsapo*.
7. *Cedrus atlantica*.
8. *C. Deodara*.
9. *Thuja Lobbii*.
10. *Thujopsis borealis*.
11. *T. dolabrata*.
12. *Araucaria imbricata*.

EVERGREEN SHRUBS.

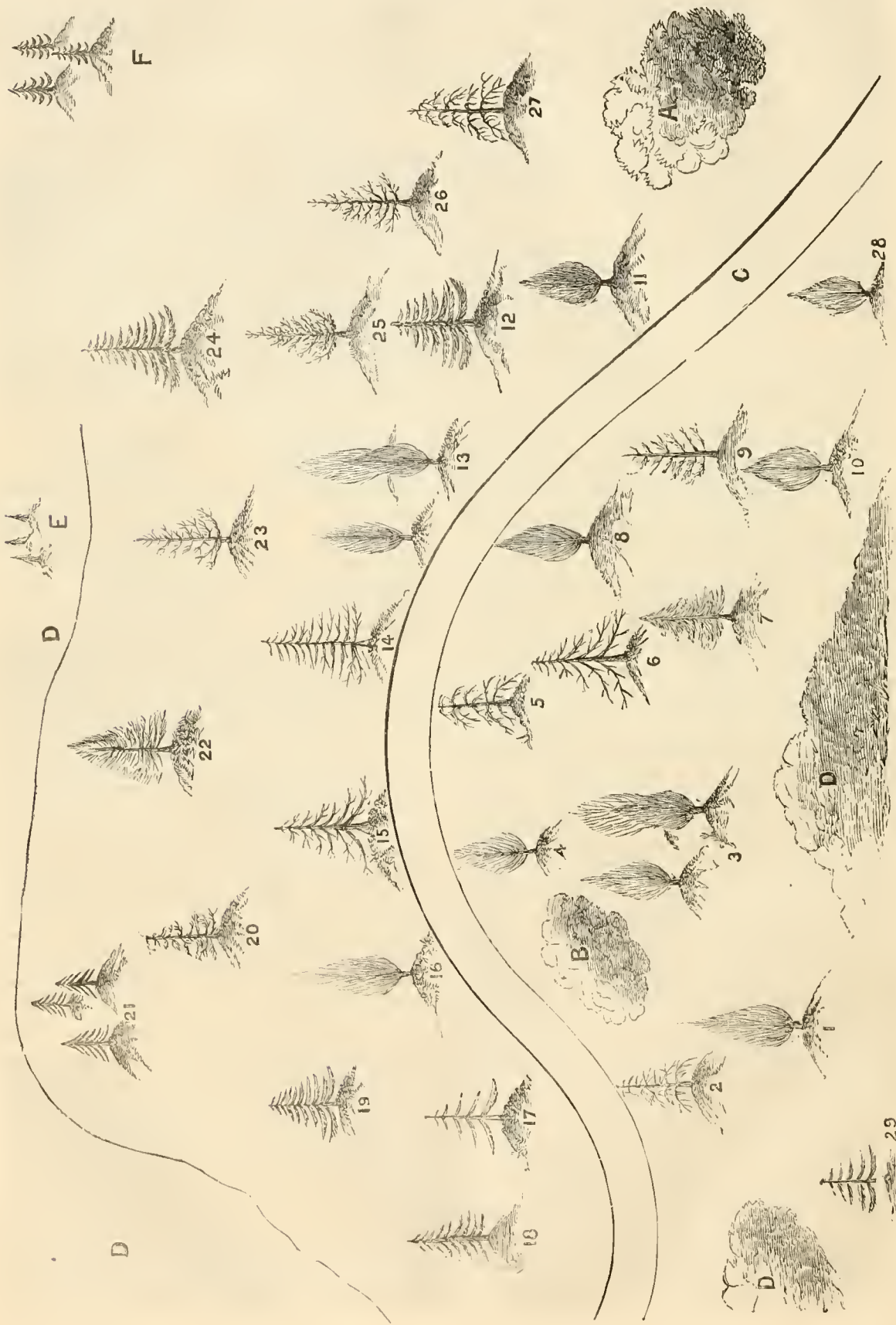
1. *Arbutus Unedo*.
2. Golden Queen Holly.
3. *Buxus sempervirens*.
4. *Rhododendron Majesticum*.
5. *Viburnum Tinus*.
6. *Ilex torulosa*. [Lusitanicus].
7. Portugal Laurel (*Cerasus*).
8. *Ligustrum japonicum*.
9. *Phillyrea latifolia*.
10. *Ilex Aquifolium*.
11. *Laurus nobilis*.
12. *Buxus aurea*.

Deciduous shrubs, from the bare aspect which they present in winter, are quite unsuitable for such a position. Some trees of pendulous habit, as the cut-leaved Birch, *Betula incisa pendula*, and *Sophora japonica*, may occasionally be introduced with advantage; but it is not often found desirable to plant trees of this class singly upon turf. Take, for example, the Weeping Birch; clothed with foliage in the bright spring and summer months, it is certainly very beautiful; but when the cold autumnal winds sweep the decaying foliage from its branches, and the deformity of its growth is laid bare, how great is the change! That which attracted us by its wealth of greenery, and the apparently graceful disposal of its growth, can now only be regarded as a grotesque object, totally devoid of grace, dignity, or beauty of any kind. The best rule, therefore, to adopt for our guidance in the selection of weeping trees for prominent positions, is to avoid any of a very stiff or formal aspect, choosing only those with that flexible pliant grace which is one of the peculiar charms of the Birch.

Taken in its broad and fullest sense, a complete pinetum consists of a collection of one or more of each variety of Conifer that is worthy of cultivation. The term, however, is very elastic, and may be applied with equal propriety to a few dozens as to hundreds. The area to be planted will, of course, be the guide as to number. Avoid all approaches to crowding; let each plant have "ample space and verge enough" for its fullest development and for effect.

The accompanying plan represents a pinetum of moderate pretensions, containing about two dozen excellent kinds of Conifers. In this arrangement I have placed the towering *Abies Douglasii*, the gigantic *Wellingtonia*, and the clump of the elegant and lofty Silver Fir somewhat in the background, not because any of them might not be brought to the very margin of the walk with the greatest propriety, but that an open expanse of turf around trees of such lofty growth and huge proportions presents them to the eye in all the fullness of that dignity and majestic grandeur for which they are so justly esteemed, and which is so much affected by crowding. A belt of Scotch Fir, Larch, and Spruce, or of these kinds mixed with deciduous trees, may be added with good effect behind the borders of mixed shrubs for shelter in exposed situations.

Very few features of a shrubbery are equal to this either in interest or importance, and yet it is not often that full justice



is done to it. Why this is so I am unable to say, but it is an undoubted fact that very many pinetums lose considerably in effect from faulty arrangement. One cause for this failure in small gardens is probably that too much is attempted, and the result is formality and crowding. Then, too, I have seen very stiff-looking angular plots of turf embellished with a number of Conifers actually planted in straight rows, and looking like nothing so much as a portion of a nursery transported in its entirety, like Aladdin's magic palace.

I would say, then, to the reader, Carefully calculate the number of plants you have space for. Single specimens should be at least 30 feet apart; select these with a view to variety. In planting, avoid the formality of straight lines, and remember that a crowded collection, however rich it may be in choice kinds, while it may attract attention for its botanical interest, can never afford much satisfaction for its beauty. If the situation is sufficiently expansive, it is quite immaterial whether its surface is level or undulating; only let the arrangement be graceful and in good taste, and it is quite certain to afford satisfaction.

In whatever position single specimens of all kinds are planted, I would strongly advise that each should stand upon a raised mound 2 or 3 feet above the general level; the smallest plants thus gain something in appearance. This plan renders the trees quite safe from the hurtful effects of stagnant water, and all flourish with increased vigour, owing, probably, to the greater depth of soil in which the roots revel.—EDWARD LUCKHURST.

REFERENCES TO PLAN.

- | | |
|--|--------------------------------------|
| 1. Juniperus virginiana. | 18. Taxodium distichum. |
| 2. Cedrus Deodara. | 19. Pinus macrocarpa. |
| 3. Group of three Libocedrus decurrens. | 20. Pinus Cembra. |
| 4. Thuja Lobbii. | 21. Picea pectinata. Clump of three. |
| 5. Abies canadensis. | 22. Wellingtonia gigantea. |
| 6. Araucaria imbricata. | 23. Pinus insignis. |
| 7. Salisburia adiantifolia. | 24. Abies Douglasii. |
| 8. Juniperus exelsa. | 25. Picea Pissapo. |
| 9. Cupressus Lawsoniana. | 26. Pinus austriaca. |
| 10. Thuopsis borealis. | 27. Abies Albertiana. |
| 11. Juniperus chinensis. | 28. Retinospora obtusa. |
| 12. Picea Nordmanniana. | 29. Cedar of Lebanon. |
| 13. Cupressus Lawsoniana erecta viridis. Group of three. | A. B. Rhododendrons. |
| 14. Cedrus atlantica. | C. Broad gravel path or drive. |
| 15. Araucaria imbricata. | D. Mixed shrubs. |
| 16. Cupressus macrocarpa. | E. Three Larch. |
| 17. Picea nobilis. | F. Three Norway Spruce. |
- Each Pinus to stand upon a raised mound as shown.

NEW BOOK.

Select Ferns and Lycopods, British and Exotic, &c., with numerous Illustrations. By B. S. WILLIAMS, F.R.H.S., &c., Victoria Nursery, Upper Holloway. Second Edition.

We welcome the new edition of this very useful volume. It embraces the culture and employment, as well as the descriptions of the plants. Two extracts will best enable our readers to appreciate the work.

"FERNS FOR THE DECORATION OF THE DINNER TABLE.—A few words in this place upon the uses of Ferns as decorative objects for the dinner table will not be out of place. Many can be grown in pots, and placed in vases when brought into the dwelling-house for use. Such kinds as *Adiantum cuneatum*, *macrophyllum*, *tenerum*, *tinctum*, and various other species of this genus; *Anemia adiantifolia*, *Anemidictyon Phyllitidis*, *Asplenium Belangeri*, *cicutarium*, and many others; *Lomaria gibba*, *nuda*, and *Fraseri*; *Gymnogramma Calomelanos* and *Lauchiana*; *Cheilanthes elegans* and *tenuifolia*; *Davallia diasecta*, *elegans*, *Tyermanii*, and other varieties; *Pteris serrulata angustata*, and some of the taller-growing *Selaginellas*, are beautiful objects for this purpose; and many others might be enumerated equally well suited for the decoration of the festive board. Some species, however, though very elegant, cannot be had in such good order through the winter months. We allude to such as *Gymnogrammas*, *Selaginellas*, and some of the deciduous kinds. These should have some of their fronds cut off, and carefully dried, in summer, when they are growing freely. They are not then missed from the plant, and do not detract from its beauty. After drying, the fronds must be carefully preserved, and brought into use in winter, when they will be found of great service for decorating the flower stand, for the table, or for arranging in a vase to represent a growing plant. In this

manner a great diversity of foliage can be had, and of many kinds that are too delicate to stand either as plants in the vase, or in the shape of cut fronds, arranged with flowers in the stand. The illustration is a sketch of one of the best flower stands for dinner-table decoration that can be used, because it



Dinner Table Flower Stand.

does not obstruct the view, a point always to be studied in table stands. To arrange such a one in good taste, Fern fronds, either in a dried or living state, are indispensable. Care must be taken in dressing one of these stands not to crowd them with great variety, or overfill them; a few simple medium-sized flowers, properly and tastefully associated with foliage, being more effective and pleasing than a huge display of large flowers and glaring colours. Small fronds of *Lygodium*, or frondules of *Selaginellas*, have a beautiful effect trained round the shaft of



Asplenium myriophyllum.

the stand, and are equally good, if not preferable, in a dried

state, for they do not then shrivel, as the tender living ones are apt to do; but proficiency in this art can only be acquired by practice, this, combined with good natural taste, is a far better guide than any rules that can be laid down."

"*ASPLENIUM MYRIOPHYLLUM*.—This very elegant plant cannot be described so as to do it justice. The fronds are from 6 to 20 inches long, tripinnate, lanceolate, and proliferous at the apex; the pinnules are very small, and dark green in colour. But to obtain a proper idea of its exquisite beauty, we must refer the reader to the illustration. Native of Mexico, &c."

SEVERE FROST.

It is sad to read in last week's Journal the account of the destruction caused by the frost of the morning of the 20th inst., but I am inclined to think that the injury to our fruit crops is not general throughout the country. Frosts at Chiswick are usually more severe than those in other parts south of the Trent, and the thermometer there falls lower than at places even in its own immediate neighbourhood. To show how local some frosts are I send you tops of Ash-leaf Kidney and Bresee's Prolific Potatoes from my garden, which is less than a mile and a half east from the Chiswick garden; these are perfectly uninjured, yet in a garden close to Chiswick, and not half a mile from me, but nearer the river, the tops, as you describe, are "black to the surface of the ground." Vegetable Marrows recently planted out are also untouched with me, but they are close to a wall.—C.

I AM sorry to say on the night of the 19th inst. we had at Vinters, Maidstone, a severe frost, which cut up Potatoes, Asparagus, and such-like very much, but I think the Apple bloom is not injured. Pears are dropping off.—THOMAS RECORD.

You record, under "Severe Frost," that on the morning of Tuesday, the 20th inst., the thermometer at Chiswick registered 22°, but you do not say whether this was on the grass or in the shade at 4 feet from the ground. Here my thermometer registered on Tuesday morning 22° on the grass, and 30° at 4 feet. I see Mr. Symons reports at Camden Square 29.6° on grass, and 32.9° at 4 feet. Some Potatoes here are partially blackened, but I think they are not so bad as they would have been had I not covered them with mats before the sun shone on them, and allowed the mats to remain all that day and the next night. Some of the Strawberry blossom and that of Currants is blackened also. Apples do not seem injured, but the blossom is not fully out generally. Do you know the old doggel?—

"If Apples blow in March,
For Apples you may search.
If Apples blow in April,
Apples may be plentiful.
If Apples blow in May,
You may eat Apples night and day."

—A. ATKINSON, Gainford, Darlington.

THE ALEXANDRA PALACE INTERNATIONAL FLOWER SHOW.

AFTER many attempts, and the propounding of various schemes which ultimately came to nothing, this new place of amusement, intended mainly for the inhabitants of northern London, was opened under the most favourable auspices on Saturday last. The details of that opening, the beauty of the building, the grandeur of the concert, and such other matters I must leave to the numerous "dailies" who now supply food to the teeming millions of our metropolis. My business is with the floricultural department, and remembering what a liberal schedule the Company had prepared, and the grandeur of the show held in the same grounds many years ago, I was prepared to see a grand exhibition; and notwithstanding that it trod so closely on the heels of the Royal Horticultural, the Botanic, and the Crystal Palace Shows, a marvellous collection of plants was brought together. Doubtless the keeping of the Show open for so many days was a hindrance to the exhibition of Orchids, of which there were comparatively few; while the international character of the Exhibition was a negative quantity, the only exhibit from abroad being a basket of indifferent *Pæonies* from M. Jean Verschaffelt, of Ghent—at least this was all that I saw. A new feature was attempted and carried out by Mr. McKenzie—the plan, adopted in foreign exhibitions, of grouping the plants for effect instead of in consecutive divisions, a plan which certainly did give an admirable character to the Show but in no way contributed to the comfort of the Judges. I have judged at many shows, but I never had so hard work as on Saturday. A pair of plants would be at one end of the building, and then another at

the middle, and another at the further end, so that it was a continual walk, walk for the two hours in which I was engaged. When this is done abroad the Judges meet the day before and have the whole day to perform their duties in.

The flowers and plants were arranged in all parts of the transepts, the centre under the dome being kept for the reserved seats for the concert; and to enumerate the fine productions here placed would be simply to reproduce the lists which have appeared lately in the gardening papers. Here were the magnificent plants of Mr. Baines and Mr. Ward; of Rollisson, Dixon of Beverley, Jackson, Williams, &c.; here, again, were the marvellous Rose bushes of Paul and Turner, the *Geraniums* of Ward, the *Azaleas* of Turner and others; but in addition to these a large number of classes had been made for Palms, Agaves, Cycads, Beaucarneas, tree Ferns, and such-like plants—these, towering above the others, and brilliant with their greenery, added greatly to the beauty of the scene. The fruit, of which there was but a small display, was exhibited in one of the side rooms; and here, too, were placed the cut flowers, for which no prizes had been offered, the bouquets and table decorations, and new and rare plants. The contents of this room do not call for any special notice. Some fine show and fancy Pansies were exhibited by Messrs. Downie, Laird, & Laing, by Mr. Ware of Tottenham, and Mr. Hooper of Bath; Tulips by Mr. Hooper and others.

I have only to add that all that courtesy and kindness could do was done by the able Superintendent, Mr. McKenzie; that the comfort of the exhibitors and Judges was well looked after; and that he had taken the occasion of gathering together from all parts of the United Kingdom men well known in horticulture and botany. Dr. Moore from Glasnevin, Mr. Findlay from Manchester, Mr. Jones from the Royal Gardens, Frogmore, Mr. Penny from Sandringham, Mr. Anderson from Meadowbank, Mr. Downie from Edinburgh, and many others met together with their more southern brethren; and these reunions tend not a little to keep up that kindly and brotherly feeling which ought to exist in the craft, more gentle than that of which Izaak Walton so sweetly discoursed. On the whole, the Alexandra Palace and park, while bearing no comparison with the Palace at Sydenham, will, it is to be hoped, form another and agreeable place of recreation to those who, in this day of excessive labour and struggle for life, require healthy amusement and recreation.—D., Deal.

The general features of this Show have been so ably and faithfully sketched by "D., Deal," that he has left but little for us to say. To enter into particulars of the subjects exhibited would be little else than to give a *résumé* of the reports of the Royal Horticultural, Royal Botanic, and Crystal Palace Shows, for of the plants brought before the public on these occasions this Exhibition was mainly composed, there being, however, some additions.

Foremost in the class for sixteen stove and greenhouse plants came Mr. Baines, gardener to H. Micholls, Esq., Southgate, with a collection of magnificent plants, notably his *Anthurium Scherzerianum*, *Ixora coccinea*, and fine young *Dipladenia amabilis*. The same exhibitor was first for the best single specimen, showing his large plant of *Hedera tulipifera*, Mr. Williams, of Holloway, being second; and Mr. Baines was likewise first for noble collections of twelve fine-foliaged plants, and for a like number of Exotic Ferns. In the nurserymen's class for the former Mr. Williams took the lead, Mr. W. E. Dixon, Norwood Nursery, Beverley, following in a spirited manner, Mr. Williams was again first for a fine collection of exotic Ferns. Palms, Tree Ferns, Cycads, and *Dracenas* were freely exhibited by Messrs. Williams, Rollisson, W. E. Dixon, Ley, of Croydon, and others, and some of the specimens were of truly noble proportions. A fine collection of Agaves came from Mr. Croucher, gardener to J. Peacock, Esq., Hammersmith; and returning again to plants in flower, Messrs. Williams, W. Cutbush, and W. E. Dixon sent good groups; while from Mr. Cooper, Rose Hill Nursery, Derby, came an excellent sixteen, half-flowering and half-fine-foliaged plants, containing a very large *Hedera tulipifera*. In Heaths, Mr. Ward took the lead among amateurs; and in *Azaleas*, Messrs. Jackson & Son and Turner were respectively first and second for six. *Pelargoniums* and *Roses* have been already alluded to, and *Calceolarias* were shown in excellent bloom by Mr. James, and Messrs. Dobson, of Isleworth.

Orchids, as already remarked, were far from numerous, Mr. Cuthbert, gardener to Mrs. Adams, Enfield, took the lead in the amateurs' class with, among others, fine specimens of *Thunia Bensonii* and *Odontoglossum crispum*, Mr. G. Wheeler being second. In the nurserymen's class Mr. Williams and Messrs. Rollisson were the leading prizetakers.

Prizes were offered for the best twelve new plants sent out in the years 1871-3. Messrs. Veitch were first with a collection containing *Croton Weismanni*, *Dracena imperialis*, *D. magnifica*, *Dieffenbachia Bansei*, *Cypripedium Dominianum*, *Odontoglossum vexillarium*, *Masdevallia Harryana*, *Maranta Makoy-*

ana, *Kentia Forsteriana*, and *Aralia Veitchii*. Mr. Williams was second with *Anthurium crystallinum* much larger and finer than the specimen shown at the last meeting at Kensington, and on this occasion it was awarded a certificate; *Dracæna Fraseri*, *Ixora Colei*, *Dracæna metallica*, *Croton Weismanni*, *Dæmonorops palembanicus*, *Pandanus Veitchii*, *Dieffenbachia Bausei*, and *Phyllotenuum Lindenii*. Mr. W. E. Dixon, Beverley, was first for six. In addition, Messrs. Veitch sent a most interesting and beautiful miscellaneous collection rich in new plants, including many fine Orchids, Palms, &c. Mr. Williams made a similar contribution, in which was *Colax jugosus*, which had a certificate. We omitted to notice when referring to the large plants ranged on each side of the centre, a very fine pair of standard Bays from Messrs. Veitch; and we may add, that among miscellaneous groups Mr. Ware's, Messrs. Downie and Co.'s, and Messrs. Rollisson's were well worthy of more extended notice.

The show of Fruit was extremely limited, nor was there anything calling for special remark; at the same time, when such well-known exhibitors as Messrs. Miles, Bannerman, and Sage come forward, it may be taken for granted that their productions are good. A few Pine Apples were exhibited. Mr. Wilson, gardener to Earl Fortescue, Castle Hill, Devon, had a good Smooth-leaved Cayenne; and Mr. Tillyard, gardener to Earl Yarborough, Brocklesbury Park, a Queen. Mr. Bones, gardener to D. Macintosh, Esq., Romford, was first for bunches of Black Hamburg Grapes; Mr. Bannerman, Rugeley, being an excellent second; Mr. Bennett and Mr. Miles had third prizes. For Foster's White Seedling, Mr. Wilson, gardener to Earl Fortescue, was first for three bunches of any white kind, Mr. Bones being second with Golden Hamburg, and Mr. Miles third with Foster's White Seedling. The best single bunch of any black kind was Black Hamburg, from Mr. Bannerman; Mr. Bones second; the best single bunch of a white kind, Buckland Sweetwater, from Mr. Miles, gardener to Lord Carington, who also carried off the first prizes for Black Cherries, White Cherries, and Figs. For Peaches the prizes went to Messrs. Harris, Sage, of Ashridge, and Gardiner, Lower Eatincton Park Gardens, Stratford-on-Avon; whilst the lead in Strawberries was taken by Mr. T. D. Irving, Easton Park Gardens, Wickham Market. Messrs. J. Monro, Potter's Bar, sent Monro's Little Heath Melon, large, and of very good flavour; and Mr. A. Colbourne, gardener to J. Blyth, Esq., Woolhampton, Loquats.

INDIGENOUS PLANTS—AN INDEX OF THE QUALITY OF SOIL.

The common Heath (*Calluna vulgaris*) grows naturally on most of the barren land that is suitable for planting. When it is rank and strong-growing, it indicates deep, black, mossy soil—poor, and naturally unfertile—but which, if dry, and the altitude not too great, will grow Scotch Fir and Birch; if wet, Scotch Fir, Spruce, and Alder; but even for the last it must be drained previous to planting. If the Heath is close and healthy, and mixed with Club Moss (*Lycopodium clavatum*), Tormentil (*Potentilla Tormentilla*), and some of the common grasses, the soil is more fertile and suitable for Scotch Fir, Larch, and Birch. Some very healthy and thriving Larch and Scotch Fir plantations are growing on soil where these plants luxuriate; Ash, Beech, Elm, Oak, and Plane will grow there for ornament, but not for profit.

The Cowberry or Cranberry of the Highlands (*Vaccinium Vitis-Idæa*) is generally associated with the common Heath and the Soft Grass (*Holcus lanatus*). It indicates a light sandy and gravelly soil, generally very hard and retentive; grows Larch and Scotch Fir, but they sometimes become affected with ground rot when from fifty to sixty years old. Birch and Mountain Ash thrive admirably upon it, but are not profitable.

The Bilberry (*Vaccinium Myrtillus*) is generally found growing with the common Heath and the Hard Fern (*Blechnum boreale*), Tormentil, &c. It indicates a superior class of soil for the Scotch Fir, Larch, and Silver Fir; but especially the first—a heavy crop of which is almost invariably found on soils where the Bilberry is plentiful. If the situation is on a sloping hill or side of a ravine, the Norway Spruce, Ash, Beech, and Elm will succeed admirably on the level ground, or in the bottom of the ravine.

The common Juniper (*Juniperus communis*), accompanied by the Bracken (*Pteris aquilina*), is very common in the districts where the Scotch Fir may be said to have its native habitat; indeed, in some Scotch Fir woods it grows as rank and profuse as the Furze, and makes excellent under-cover. The soil is generally good for growing Pines where the Juniper grows, but occasionally varies in depth. The trees named as suitable for growing on the Bilberry land will grow with the Juniper; but we would prefer for a profitable crop to keep to the Scotch Fir, Larch, and Birch, giving the preference to the first, which almost invariably produces a heavy crop and good quality of timber on Juniper ground.

The common Whin or Furze (*Ulex europæus*) is very abundant on waste land, and seems to be such a selfish plant, if we may use the term, that other plants are rarely growing with it; but in close proximity, on good soils, are to be found Ragwort (*Senecio Jacobæa*), Thistles (*Carduus*), Wild Clover (*Trifolium*), &c.; and on the poorer soils, Cowberry (*Empetrum nigrum*), Sorrel (*Rumex Acetosella*), Carices, &c. The Ragwort and Thistles must be understood as applying to uncultivated ground; for if the ground has been cultivated, these are only a criterion as to fertility, and not to depth or quality of soil. The Furze, at a casual glance, is not a safe criterion as to the quality and kind of soil, as it will grow almost anywhere. Before fixing the quality of the soil, it is necessary that the quality and size of the Furze should be considered, as it is only on good loamy soil that it develops strong stems and branches. When it is found growing thus, the ordinary hard woods may be planted, along with Spruce and Silver Fir. If the situation is sloping, or the sides of a glen, Larches will succeed; but they seldom attain a large size among Whins on flat ground. When the Whin is dwarf in habit, and the stems slender, it indicates thin gravelly soil, with a hard bottom, unfavourable for growing any kind of forest trees. Birch, Scotch Fir, and even Larch will grow if they can get a start; but the Whins are so aggressive that it is only by careful treatment that the trees are enabled to overtop them. However, when they do so, success is gained, as the Whins offer no further opposition. Although we have said that slender and dwarfish Whins indicate poor soil, there are exceptions, as in the case of Whins that have been burned or cut over; or, again, on ground that has been reclaimed and afterwards allowed to return to its natural state. Under any of these circumstances the Whin is slender and dwarfish for a short time. Taking the Whin alone, it is not a plant on which much dependence can be placed as a criterion of the quality of the soil; but when viewed with the plants growing in its immediate proximity, we consider it affords a sufficient indication of the soil above mentioned.

The common Broom (*Cytisus scoparius*) is invariably found on dry situations, and always indicates a fair soil. If it is strong and healthy, and growing along with the Yarrow (*Achillea Millefolium*), Bird's-foot Trefoil (*Lotus corniculatus*), Wild Clover, Tormentil, &c., the soil and subsoil are invariably good for planting trees. The kinds most suitable, if the situation is moderately sheltered, are Beech, Oak, Norway Maple, Plane, Larch, Silver and Scotch Firs; but if the situation is exposed, the Larch and Scotch Firs produce the most valuable crops.

The Bramble (*Rubus fruticosus*) and Dog Rose (*Rosa canina*) indicate a good loamy soil, generally inclining to clay, very suitable for growing ordinary hard woods, as also the Austrian Pine and Silver Fir. Although the Bramble and Dog Rose are always found growing on dry portions of soil, still, ground in close proximity, and the subsoil, are often wet, and require to be drained before planting.

The Raspberry (*Rubus Idæus*) is often found on soils similar to the last, and denotes similar results; but it is also found on higher, more exposed, and poorer soils than suit either of the two last. When found thus, its stems are slender and short, and the leaves small, indicating a light soil suitable for Scotch Fir, Larch, Beech, Birch, and Mountain Ash.

The Bog Myrtle or Sweet Willow (*Myrica Gale*) is common in some districts, often accompanied by the Cross-leaved Heath (*Erica Tetralix*), but invariably grows on a poor, wet, sandy soil, unsuited for trees; but, if thoroughly dried, will grow some of the hardy species, as Birch, Alder, Mountain Ash, and Scotch Firs.

The foregoing are the most common native shrubs; but there are some other species of flowering plants, and even the Mosses, that are as much to be depended upon as indicators of the soil, and sometimes the flowerless plants are more reliable than the others.

The Male Fern (*Lastrea Filix-mas*) and the Bracken are not safe criterions as to the depth of the soil; but they can be always depended upon as to quality; for neither of them grows on bad soil. It is invariably good soil when they are accompanied by the common Bugle (*Ajuga reptans*) and the Primrose (*Primula vulgaris*), which are generally found in low-lying situations, or hollows where an amount of soil has accumulated; and it may be asserted that in this variety of soil almost any forest tree will succeed. But we particularly recommend for the sheltered portions the Silver Fir, Douglas Spruce, Larch, Pinus Laricio, Elm, Ash, Plane, and Chestnut; and for the more exposed parts, Larch, Scotch Fir, Beech, Norway Maple, Plane, Oak, and Birch. The appearance of the Foxglove (*Digitalis purpurea*) among the common Ferns indicates a medium soil inclined to be dry, but on which a great variety of trees will grow, and which we consider particularly suited for Beech and Scotch Fir. If the common Ferns are mixed with the Polypody (*Polypodium vulgare*), St. John's-wort (*Hypericum*), &c., along with a sprinkling of Heath, the soil is generally more shallow, and contains large stones or boulders. Still, although shallow, it is always kindly, and will grow forest trees better than its appearance

would indicate; but the Larch, Scotch Fir, Birch, Mountain Ash, and Hazel are the varieties that thrive best on the soil.

The Inland Bent (*Juncus squarrosus*) and the small Sedges (*Carex* sp.) are generally found growing along with short Heath, and indicate a poor soil, with a retentive and impervious sub-soil, invariably inclining to be wet, and in its natural state only suited for growing some of the common Willows, dwarf Birch, and Alder; but if drained it will grow Spruce, and even Scotch Fir. In recommending Spruce, we are supposing that the situation is moderately sheltered, as these plants are often found at altitudes and in exposures quite unsuited for the growth of Spruce. Even the Alder, Birch, and Scotch Fir are seldom profitable trees on soils where the aforesaid plants are abundant.

The Sheep Fescue (*Festuca ovina*) and the Wire Grass (*Nardus stricta*) are often found growing together, and, to the casual observer, may be taken for the same plant. They form the principal vegetation of some upland districts, and denote a dry, thin soil, comparatively rich in vegetable matter, but not very suitable for the growth of trees. The kinds most suitable are the Birch and Mountain Ash. The difficulty in growing trees on soils where these Grasses predominate is more owing to the situation and the herbage than to the soil, as to all appearance the latter is generally good; but the situation, being so much exposed, is dried up in the summer season, and during the winter the herbage is so close that the moisture does not penetrate it readily. But when trees can be got to cover the ground where this herbage grows, their success is secured.

The Tufted Hair Grass (*Aira cæspitosa*) is generally found on light or sandy loam (usually poor), resting upon bluish clay or sometimes running sand. The soil naturally is too wet for growing trees; but when drained is suitable for Ash, Elm, Poplars, Willows, and Spruce. The soil on which this Grass grows varies, but still admits of the profitable cultivation of any of the trees before recommended.

The Broad-leaved Flag (*Iris Pseud-acorus*) is invariably found in hollows or flat ground, and indicates a brown, loamy soil, chiefly composed of vegetable matter. The situation is generally wet, but when drained is very suitable for growing tree Willows, Grey, White, and Black Poplars, Lime, Horse Chestnut, Ash, Elm, Spruce, &c. Where the Iris is close-growing and abundant, it is sometimes difficult to get young trees to start without deep trenching or pitting of the ground before planting, the former being preferable.

The common Rush (*Juncus effusus*) is not particular as to soil if the situation is sheltered and damp. The variety of soil is indicated by its habit. If robust, the soil is similar to that of the Iris, and will grow the same kind of trees; but if slender, the soil is poor, and principally composed of sand or a light loam, most suitable for growing Alder and Spruce. Rushes afford an unmistakable proof of dampness, and the ground where they are found growing must be thoroughly drained before planting. It is sometimes necessary to trench it, but not always, as there are often spots where the trees can be planted. If the ground be well drained and the trees succeed, the Rushes will soon disappear.

The Reed (*Phragmites communis*) indicates a strong soil, sometimes inclining to clay, and sometimes to moss, but always full of vegetable matter and surcharged with water—so much so that no trees will grow on it until the ground is drained. The situation is always in flat or hollow ground, and sheltered. The trees most suited to this soil are Spruce, Alder, White and Grey Poplars, Huntingdon, Bedford, and White Willows. Some of the best specimens of Willows are to be seen growing on soils where Reeds were once abundant. The treatment required before planting is much the same as that recommended for the Iris.

The Queen of the Meadow (*Spiræa Ulmaria*) and the Wood Hyacinth (*Endymion nautas*) are plants indicating a deep loam or alluvial soil, sometimes with a sandy bottom inclining to clay; generally damp, but not so much as to hinder the growth of trees; of course, where too damp, it must be drained before planting. On this class of soil all the varieties of forest trees grow well. Some of the largest Poplars and Willows and best-matured Oaks and Larches that we have ever seen were grown on this description of soil.

Some of the Mosses are also sure indicators of the soils. Conspicuous among these is the Grey Moss (*Trichostomum lanuginosum*), so common on some hill-sides. The presence of this plant is a beacon to the forester, warning him of "rocks-a-head;" in other words, not to expect great returns from any trees that may be grown in proximity to it. It is found growing on hill-tops and mountains, where few other plants grow, and it is unnecessary to warn foresters that trees will not grow in these situations. It is also often found growing along with the common Heath, and the inexperienced may be led into a mistake as to the fertility of the soil, as some allow that trees may be grown wherever Heath will grow. No doubt, where the Heath is growing along with the Moss it indicates an improvement on the situation where the Moss is found growing almost alone; still, wherever the Moss is abundant, a profitable crop of trees cannot be grown; but where, for the purposes of ornament, &c., it is

necessary to plant the ground, the trees most suitable are Scotch Fir, Pinus montana, Birch, Alder, Goat Willow, and Mountain Ash. Spruce can also be grown on the damp portions if the altitude is not too great. These will grow and have a fair appearance; but, as we said before, they will not be a profitable crop.

The Wood Mosses (*Hypnum* sp.) are most common on ground where a crop of trees has been previously grown. They generally indicate a light, open soil, resting on whin or trap rock, suitable for growing Larch, Scotch Fir, Norway Maple, and Birch. In planting ground where these Mosses are abundant, it is necessary to pare them off before inserting the plant, as, if they are left, they absorb the moisture that should go to the nourishment of the plant. This does well when small plants are used, but when a successful crop is wanted on ground where a crop of trees has been previously grown, it is safest to have the ground pitted previous to planting.

The White or Bog Moss (*Sphagnum* sp.) is characteristic of wet, stagnant situations, with a considerable portion of porous peat in the soil. If thoroughly dried and solidified, it will grow fair specimens of Alder and Spruce, but to attain this the drainage must be carefully attended to.

The Hair Moss (*Polytrichum commune*) is also invariably found in damp situations, but indicates a firmer and better class of soil than the last. The Cross-leaved Heath (*Erica Tetralix*) is generally in close proximity. The ground is always wet, but when thoroughly drained it will grow Spruce, Alder, and Scotch Fir, Grey and Balsam Poplar. The soil is generally brown peat, naturally poor, and the subsoil gravelly, and sometimes soft bluish clay.

We have purposely omitted the nutritious natural Grasses so common in meadows and cultivated ground, as it is well known that these only grow upon a quality of soil that is seldom appropriated to the cultivation of forest trees, but on which all the varieties of trees seem to luxuriate. The plants enumerated are some of the most common, and, in our opinion, most characteristic of the native plants. A greater number might have been given, but our aim has been, not to multiply indicators, but rather to select a few well-known plants that were positively indicative of the soils on which they grow, and, at the same time, so common as to be found in every district. To have specified the plants found in a particular district would have been an easier task, but would not have been so generally useful. However, we have endeavoured to start the subject, which is of great importance, and one that, in the interests of arboriculture, we trust will yet be fully developed.—WILLIAM GILCHRIST (in *Scottish Arboricultural Transactions*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE should be taken of showery weather to transplant and earth-up all crops that require it, for if done when the soil about them is dry the roots will not receive that benefit from rain which they otherwise would do. In pricking-out or transplanting, particular care should be taken to press the soil closely to the roots of the plants, for if left hollow and loose about them drought will soon stop their growth, or probably cause them to perish. Wherever it is convenient to plant with a trowel, it is far better than planting with a dibber, as with the latter the roots are either left in a hollow or are crushed-up together and rendered nearly useless. This is one reason of plants of the same sowing varying so much in their growth. In one case the plants are pulled up and deprived of half their roots, and as carelessly planted; in another they are dug-up with the greatest care, and are then transplanted and watered as carefully as the others were carelessly done. It is advisable to discontinue cutting *Asparagus* from weak beds, or those which have only been made from two to three years. Keep both old and young beds free from weeds, and thin any other crops that may be growing in them. Prick-out any *Broccoli* that is sufficiently advanced in growth. Sow a full crop of Cape and Grange's Early White. Where *Cabbages* were planted in the autumn at a foot apart in the rows, every alternate plant should be pulled up as required for use. This will give the remainder time and space to attain perfection. Sow a full crop of *Cardoons*. Plant out the early crop if they were sown in a seed bed; choose a rich piece of ground for the purpose. It will not be necessary to plant largely of the first crops, as they soon run to seed. Plant out some of the most forward *Celery* in trenches, keep it well watered in dry weather; continue to prick out from the seed beds for late crops. Where the seed of *Cucumbers* has been sown on ridges to produce Gherkins, thin the plants to three under each hand-glass. Keep up the heat of the principal beds if fine long fruit is required. Make another small sowing of *Endive*. The sowing of the main crop should not be made before the middle of next month. Earth-up *Dwarf Kidney Beans* that have been planted out, and sow again. Make a sowing of two or three sorts of *Lettuce*, by this means the season of one sowing is prolonged. The *Paris Cos* is a very good summer Lettuce. For *Mushrooms*, the hay with which the productive beds are covered will require

removing occasionally, as it is liable to get damp and mouldy, which will rot the Mushrooms. Take the first favourable opportunity of earthing-up all *Potatoes* that are sufficiently forward; the others may be hoed between to loosen the earth and destroy weeds. Make a good sowing of *Turnips* for early autumn use; thin-out the advancing crops. Plant-out *Vegetable Marrows* on a rich piece of ground where there is plenty of room for it to grow. Where the ground is cracked from drought amongst seedling crops, rake it over while they are in a young state and before they are thinned, this will be found of great service to them throughout the summer. Loosen the earth about the growing crops as frequently as possible. Keep down weeds, and never allow any of them to seed.

FRUIT GARDEN.

Examine those Peach trees that suffered from frost last season, and carefully remove every piece of gum and canker with a sharp knife. Prevent all colonising attempts of the green fly, and see that the roots are not suffering from want of moisture, or much mischief will be produced by a wet autumn. Destroy caterpillars and black fly on Cherry trees by squeezing them, and afterwards give a forcible washing to the trees with clear lime water. Whatever system of training is adopted with Raspberries, no time should now be lost in removing all those young shoots that will not be required for bearing wood next season.

FLOWER GARDEN.

When the planting-out of half-hardy plants shall have been completed, the business of the flower garden for some time will in a great measure be merely routine, such as hoeing and raking, tying out and pegging down, removing dead leaves and flowers, and keeping every thing and every place as it ought to be—clean, neat, and tidy. Under the protection of a mulching of short grass stick a few branches thinly in the beds, and place an inverted pot over the most tender plants. Newly-planted subjects, especially where not mulched, will require strict attention as to watering, and where the planting-out is not completed proceed with it as fast as possible. Where they are admired late in the season a few annuals may be sown for late blooming, and a few also may be kept in pots as stop-gaps in case of need. Remove the flowers and seed-pods from American plants as fast as they get shabby, which will add materially to the strength of the plants. Give the beds a good flooding of water. The pegging and tying-out of the plants should be no longer delayed. Double Wallflowers, Mule Pinks, and some common Dianthus, Alyssums, Phloxes, Perennial Iberis, and many kinds of dwarf Cistus and Helianthemums, may be propagated under hand-glasses in a shady situation, and will be found very useful next spring. Keep Auriculas free from weeds, occasionally watering and stirring the surface. Offsets may be taken off if rooted, place them round the sides of the pot. Where the seed-vessels of Polyanthuses are swelled, should any decayed floret remain they must be removed, as they are liable to retain moisture to the detriment of the seed. Remove the awning from Tulips, and let the flowers have all the weather. Where seed is required break off the capsules. Unless Carnations are carefully tied the wind will break or twist-off the shoots. Worsted is the best material to tie with. As laterals are thrown out from the sides they may be pinched-off in order to strengthen the other flowers. Prepare a bed for Pink-pipings in a shady situation, composed of sandy peat and leaf soil equal parts. Cuttings or pipings may be put in under hand-glasses as soon as the grass is sufficiently firm. Let the stakes be put to the Dahlias as soon as convenient; when delayed much longer the tuber is often injured by the insertion.

GREENHOUSE AND CONSERVATORY.

The climbing or roof-trained plants while growing will require constant attention in thinning and stopping, and if bright weather, which may now be expected, should set in, a slight shading will be of benefit on very hot days. As soon as the weather shall have become more genial, air must be freely admitted; and pot plants, especially fine specimens, must be allowed abundance of room. Maintain a moist temperature, and see that nothing suffers from want of water. Inspect carefully young stock, especially that for blooming next winter. Chinese Primroses and Cinerarias may be had in flower in October and November. Another sowing may be made shortly for spring decoration. Continue to start at intervals successions of Achimenes. Chrysanthemum cuttings may be put in, they will do without bottom heat; short-jointed wood will strike freely under a hand-light. Gloxinias require partial shade and a moist heat. Gesneras may be treated in the same way, but they like more light. Amaryllis may be removed to the conservatory for blooming, where they will prove a great acquisition. Where it can be accomplished watering should still be done in the morning, that all superfluous moisture may be dried up before evening. The conservatory should now be thoroughly relieved of all superfluous stock, for the reception of which tiffany houses will be found extremely useful. Nothing will therefore be required in show houses or structures of that kind, but to carry out a cleanly system of cultivation, and to introduce specimens in flower from other houses or pits. Keep the atmosphere as

moist as circumstances will admit. Attend to plants for autumn and early winter decoration, such as Japan Lilies, Chrysanthemums, Scarlet Salvias, Tree Carnations, and plants of that sort. Give them plenty of pot-room, good rich compost, a moist atmosphere, and plenty of space for the proper development of their branches and leaves. Solago distans is a useful plant, which must not be forgotten; it flowers freely, and requires nothing beyond a cold pit to grow in. Epacris, winter-blooming Heaths, and Cytisus should likewise be cultivated in quantity, for few plants surpass them for winter decoration. The atmosphere of plant houses can scarcely be kept too moist at this season, therefore sprinkle every available surface frequently, and syringe growing stock lightly twice a-day during bright weather.—W. KEANE.

DOINGS OF THE LAST WEEK.

This has been a very unfavourable season for us in many respects. Since our last report we have had a sharp frost; the thermometer registered 28° Fah., or 4° of frost. Our bedding plants have not suffered in the least, nor were the Potatoes, protected by a wall on the east side, damaged; indeed, it seemed to be the east wind which was the cause of any damage. It was interesting to observe the effect in a field of 4 acres of Potatoes close to the garden; all in the field were cut down except those under a wooden fence 6 feet high, which runs down the east side of the field; for quite twelve paces from this fence scarcely a leaf was injured, and in another part protected by a hedge little damage was done. A high west wind prevails now, which is quite as injurious to tender plants as cold.

KITCHEN GARDEN.

Peas.—Earthing-up and sticking these. The succession sowings are doing very well. The ground was lumpy, notwithstanding repeated turning-over in a dry state, so we had it well rolled with a heavy roller before drawing the drills, and also trod the seed in firmly. As pea-sticks are not easily obtained here, we have sown some of the dwarf sorts, as Little Gem and Blue Peter.

We have also been hoeing and earthing-up Broad Beans, sowed Spinach between the rows of Peas, and continued to make sowings of small salads. We only grow one sort of Radish now, the French Olive-shaped Breakfast; it is certainly superior to the Red Turnip Radish. Pricking-out later-sown Celery in light soil, and hoeing amongst all growing crops to kill incipient weeds.

FRUIT AND FORCING HOUSES.

The Grapes in the late Muscat houses seem to have set well; after the first flowers open we do not stop the growing shoots until all are set. We have a fancy that the berries set better if the lateral shoots are not touched; they are now being stopped and tied-in to their places, and the berries are being thinned. There is an excellent plant of Mrs. Pince in the house; it has a peculiarity worth noting. The leading shoot seems to be scorched at the point, and dies at the sixth or ninth leaf; after it breaks the second time it goes on all right. The evil seems to be caused by strong sun. Throwing some light shading over the place prevents this if it is done in time. On the back stage of the Cucumber and Melon houses Figs and Orange trees are growing in pots. The Fig trees afford some excellent dishes in June, and are little trouble. Syringing them twice a-day causes them to be clean and healthy. Not so the Oranges; no amount of syringing will dislodge the scale, which sticks to the bark and leaves like limpets to the rock, and causes them to be covered with a sticky black substance. We have been washing the trees with a sponge dipped in water in which soft soap has been dissolved; nothing is so effectual as hand-washing for them. A few weeks ago we wrote about the Melons dying-off in a mysterious manner. A strong healthy plant of Scarlet Gem has become affected, and is gradually dying before our eyes, with no sign of decay on the stem. For the last ten days it flagged in sunshine, though shaded; after the house was shut-up in the afternoon it recovered, and did not look different from the other plants. It has, however, gradually become worse, and now seems past recovery. On cutting through the stem it will no doubt, like the others, show decay at the core, induced through something deleterious in the soil, or in the water applied. The case is quite new to me.

ORCHARD HOUSE.

There is always a little work to be done to the fruit trees, as they cannot all be pinched and the fruit thinned at one time. Much watering is required, and constant attention to see that no tree suffers. The Strawberry pots require looking over twice daily if there is much sunshine. We stood the pots in saucers of water once to save watering, but have not continued to do so, as better fruit is obtained if the pots stand upon their own bottom. The fruit, which is now swelling fast, has been supported by sticks.

CONSERVATORY AND PLANT STOVE.

We have been repotting small growing plants of Ferns and

other subjects requiring attention. This ought always to be looked to in time, as, if neglected, the plants will be much injured. The beautiful *Adiantum farleyense* requires frequent potting to do well, and will not grow freely if allowed to be pot-bound in the early stages of its growth. Turfy loam, with a little Orchid peat added, seems to suit it. We have been washing, training, and re-arranging the plants. In the conservatory the work has been similar to last week. Azaleas are now making a good show, and require much attention as regards watering and shading. If the soil in the pots is allowed to become over-dry, or the flowering plants to be exposed to the sun for a few hours, the effect of either will be most disastrous. We are careful to remove all dead or decaying leaves and flowers from *Pelargoniums* and other flowering plants as soon as perceived. Any little attention of this sort can readily be given when the plants are being watered, and young men who are alive to their duties will not require to be constantly told about such trifles, which, however, if not attended to in time, are a constant source of annoyance to many persons.

We sowed *Cineraria* seed, and placed the pots in a frame where there is very little bottom heat; we do not trouble about the named sorts now, as seedling plants grow most freely, and are less trouble. *Primula sinensis* has been pricked-out of the seed-pans into small pots, and is growing freely. *Primula japonica*, which was sown in August last year, is just coming up in an irregular manner; the plants are potted-off singly in small pots as they become large enough. We have also been potting-off the latest-struck cuttings of perpetual-flowering *Carnations*; they are potted singly in small 60-sized pots, and placed in a frame, where the lights can be kept close for a few days, afterwards air is freely admitted.

FLOWER GARDEN.

We have been filling rustic baskets with plants; these, with some stone vases, are placed in suitable positions on the lawn. In the centre of the vase is planted one of the more choice stage *Pelargoniums*, and around the edge trailing plants and dwarf subjects. The weather is warmer now, but we shall not venture to plant-out the tender plants for a week longer. The *Roses* are growing freely, and promise to give us good flowers; we should have looked over them and thinned-out the young shoots, as well as destroyed the bud-worm, but want of time prevents us. Mowing the lawn and trimming the edgings, as well as destroying all weeds, have occupied the rest of our time.—J. DOUGLAS.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

NEW FLOWER-POT (J. H.).—You had better write to Mr. Matthews and ask him if it is registered. He can best reply to the question.

TWELVE GOOD FRAME AURICULAS (*Auricula*).—*Green-edged*.—Traill's General Neill, Campbell's Lord Palmerston, and Headly's Conductor. *Grey-edged*.—Fletcher's Ne-Plus-Ultra, Lightbody's Richard Headly, and Cheetham's Lancashire Hero. *White-edged*.—Popplewell's Conqueror, Smith's Ne-Plus-Ultra, and Heap's Smiling Beauty. *Sells*.—Spalding's Blackbird, Campbell's Pizarro, and Lightbody's Lord Clyde. Refer to the advertisers in our columns for a florist to supply them.

PRIMULA JAPONICA PROPAGATION (*Idem*).—*Primula japonica* is propagated by division of the roots as well as by seeds.

SPRING-FLOWERING GREENHOUSE PLANTS (*Idem*).—*Erica byemalis*, *Hedera tulipifera*, *Acaëcis gracilis* and *armata*, *Pimelea mirabilis*, *Azaleas*, and *Camellias*.

DIELYTRA SPECTABILIS (H. R.).—At Tunbridge Wells and in our southern counties it begins to bloom in April; but in the middle and more northern counties, except under walls, it does not flower until at least six weeks later.

FAULTY FLUE—FLOODED STOKEHOLE (B. D.).—The flue which emits a sooty smell should be thoroughly examined; and if the mortar is intact, two or three dressings of the whole of the exterior with Portland cement mixed with water to the consistency of ordinary whitewash, and laid on vigorously with a brush, will prove a cheap and effectual remedy. If, however, the mortar in the joints has perished, so that it may be raked out easily with a pointed stick, the flue ought certainly to be pulled down and rebuilt with hard bricks of good quality, using firebricks or bricks laid in fireclay for the sides and top of the part close to the furnace. Your plan of cementing the stokehole to prevent the water from soaking through the walls is good. Before putting on the cement see that the brickwork is sound; if it proves faulty, replace it with hard bricks laid in cement. Before making a stokehole in a wet situation, or wherever there is risk of flooding, it is a good plan to make a drain of 4-inch pipes a few inches below the floor-level, connecting it with a grating set in the brickwork of the floor to carry off the water as it enters, the drain being continued to a suitable outlet.

COMBINED PEACH HOUSE AND VINERY (*Constant Subscriber*).—The glass roof, with front sashes 2 feet high resting on the back wall of a cold pit that is 2 feet above the surface, and 6 feet from a back wall 12 feet high, would form an admirable protection for the Peach and Nectarine trees already planted against the back wall; but it would not answer the double purpose of vinery and Peach house in the way you propose, because if the Vines were planted in front and trained up under the roof, the shade would inevitably prove fatal to your present hopeful prospects of Peaches and Nectarines. The only really practical way of successfully cultivating Vines and Peaches in such a structure would be to remove the trees to the front, train them to a trellis half way up the roof, and plant the Vines against the back wall at 12 feet apart, training them, not down, but along the upper part of the roof-trellis. Black Hamburgh is the best kind for general crop. Look well to the

drainage of the border before you begin building, so that there may be no future risk of stagnant water accumulating in the soil.

VINES BLIGHTED (J. H.).—What you call "blighted" is by gardeners called "shanking." It is usually caused by a deficient supply of sap. Give copious waterings once a week with weak, tepid, liquid manure, and mulch the surface of the ground over the roots.

ASPARAGUS CULTURE (*North Lancashire*).—The main point in Asparagus cultivation is to provide a deep, rich sandy, open soil, with a well-drained subsoil. We advise light loamy soil, drained 4 feet deep, trenched deeply, and mixed with a fourth of manure and a sixth of sea or river sand, or if at all heavy with one-fourth of the latter material. Make the surface very sandy; if plants are put in cover the crowns an inch deep with sand. Dress the beds with salt in March, and again at the end of May, applying on each occasion half a pound per square yard, and water with liquid manure from May up to the middle of September, twice or more a week. Cover the beds in autumn with 3 inches of litter, and then with an inch or two of soil. This protects the crowns from frost; remove the covering partly in spring, leaving the crowns covered about 3 or 4 inches deep with fine soil or manure nearly reduced to soil. Sow in two rows 1 foot apart, with 3-feet alleys between, and thin the plants out to 9 inches apart in the rows. At three years it will be finer than that planted at two years old.

BLACK FLY ON CHERRY TREES (B. B.).—Having tried tobacco water we think it must have been weak. We advise you to try again, adding six gallons of water to every gallon of tobacco juice, and before syringing with it dip the end of the shoots and the leaves infested in the tobacco water, rubbing them between the fingers and thumb. This dislocates and destroys a great number, and, along with the dipping and after-syringing, generally effects a cure. It has not failed with us, nor has syringing them and dusting them whilst wet with tobacco powder, syringing again in the morning with soft-soap solution, 2 ozs. to the gallon. When badly infested the finger-and-thumb process, and dipping in tobacco water at the same time, are a necessity. Clarke's compound, used at the rate of 3 ozs. to a gallon of water, will also kill them.

GENTIANA Verna and IRIS RETICULATA CULTURE (G. S.).—The *Gentiana verna* requires deep rich fibrous loam, with a sixth part of pieces of limestone, gravel in like quantity, and a fourth of sandy peat, very old leaf soil, or cocoa fibre refuse, the latter is preferable when rather old. It is best grown on a sunny bank, but requires to be kept very moist, and to have very efficient drainage. It should be well supplied with water, but so that the latter may pass away rapidly; constant percolating moisture is essential to full vigour. It will succeed in garden borders in deep loam mixed with gravel—better if mingled with pieces of limestone; and well drained, keeping moist in summer—or it may be grown in pots in the compost above named. *Iris reticulata* requires good rich loamy soil with leaf soil, and to be kept well supplied with water until the growth is complete, and drier afterwards. If the pot be plunged it will have sufficient moisture. It is not tender, thriving well out of doors, and is good for pots.

COARSE GRASS ON LAWN (F. J.).—The grasses you enclosed to us are much too coarse for a lawn. We should grub them up at once, for if they spread they will interfere with the growth of the other finer kinds. By grubbing-out the coarsest grass and weeds you will best secure the growth of the finer sorts; and with constant rolling and mowing, never allowing the grass to become long before mowing, we should give a dressing of bone dust after mowing when there is an early prospect of rain. It would be better given in March. It may be applied at the rate of one peck to 30 square yards.

SOIL FOR ECHYVERIAS and SEMPERVIVENS (*Idem*).—They require rich, light soil, adding to it some leaf soil or thoroughly decayed manure, and some brick and old mortar rubbish if at all stiff.

HEATING BY HOT WATER (*Frigus*).—There is not any later edition that we know of the work to which you allude. Our "Greenhouse Manual," which treats of heating garden structures, would probably suit you. It may be had free by post from our office for *td*.

BOTTOM HEAT TO CUCUMBERS (*Infelix*).—The best mode of furnishing bottom heat is by means of a chamber. The heat is thereby more uniform, and not so liable to sudden changes as in the case of rubble over hot-water pipes. In the latter mode the pipes are surrounded and covered with rubble, rough at the lower part and finer at the upper, which should cover the pipes 9 inches, and be rather finer next the soil. The rubble should be covered with a thin layer of sods, grass side downwards, or the roughest of the compost. By either plan you ought to grow Cucumbers or Melons well.

WHITE-LEAVED PELARGONIUM (*An Australian Correspondent*).—No *Geranium* with pure white leaves has stamina enough to live; all pure white sports have hitherto defied every attempt at propagation. There are several white-variegated varieties now with white flowers, but those hitherto sent out seem deficient in vigour for bedding purposes.

BUDDED ROSES FAILING (J. E. B.).—We believe from the specimen sent that the bark of the Rose shoots is eaten by slugs, the damage being done at night and the enemy retreating by day. Is there harbour in the shape of stones, or Box-edging, or rockery near enough for them to travel by night? If once either snails or slugs get a taste for a particular plant they will travel long distances backwards and forwards for their food, as we have often known to be the case with regard to *Petunias*.

EUCHARIS AMAZONICA BULBS ROTTED (*George*).—We have had no experience with the bulbs of this plant decaying. It is evergreen, and should not be dried-off in the same manner as *Amaryllis*. It flowers three or four times in the year, and requires to be freely watered except after each flowering period. The pots in which the plants are should be well drained, and the potting material should be the turfy part of sandy loam with some leaf mould added. We fancy you must have allowed your plants to become too dry, as the other treatment is right. The *Amaryllis* bulbs should be potted firmly in small pots. Six-inch pots are large enough for the largest bulbs, 4 and 5-inch pots for smaller bulbs. Pot firmly in turfy loam; withhold water altogether when at rest, and remove the pots to a cool house.

ZONAL PELARGONIUMS NOT FLOWERING (J. Whitley).—This is one of the easiest plants in existence to grow and flower. Your soil must be too rich, or else the varieties you have are worthless. Obtain some of the sorts advertised weekly in this Journal, plant in moderately rich or poor soil, and they will flower well.

FLOWER BEDS PREPARING (*Anxiety*).—The beds manured in only need forking over and breaking fine; then plant out as usual weather throughout the season. If not manured in aut-

with the soil some very old manure, leaf soil, or fresh rich soil. If the plants are good, and the situation open, water freely in dry weather, and there will be plenty of flowers. Stir the surface of the soil frequently, so long as it can be done without injury to the plants, and pick off the decayed leaves and dead trusses of flowers. Peg the *Verbenas* down as they advance until the surface is covered.

BED ON LAWN (Mrs. B. Lynton).—*Amaranthus melancholicus* ruber edged with *Centaurea* will be best. Purple *Verbena* edged with yellow *Calceolaria*, but the latter must be kept pegged down.

MALE BLOSSOMS OF CUCUMBER (Cucumber).—Leave the male blossoms on the plants whether you require seed or otherwise.

VINE BORDER—PEACH-HOUSE BORDER—VINES AND PEACHES (Dunbarshire).—For your vine border you will need about half a ton of half-inch bones, ten bushels of charcoal, and one part in six of the soil of cow manure. For the peach border we should have a quarter ton of half-inch bones, eight bushels of charcoal, and one part in six of cow manure. We should prefer the cow manure for the peach border, especially if the soil is light. Add one part in eight or ten of old lime rubbish to your vine border. The soil you name will be suitable. The vines we should advise for your house are Black Hamburg, Frankenthal (Pope's Hamburg), and Mill Hill Hamburg, which are all black, and of white kinds Buckland Sweetwater, Foster's White Seedling, and General de la Marmora. These will do well together, and come in about one time or succeed each other at a few days' interval. If you wish for those which require heat and will hang some time, we should advise you to have a order inside the house of not less than 3 feet in width, and plant the vines inside. Muscat Hamburg, Mrs. Pince's Black Muscat, Alicante, Lady Downe's, all black; and Muscat of Alexandria, and Trebbiano. The former lot will, however, suit you best. Of Peaches have Royal George, Noblesse, and Grosse Mignonne, with Elrue Nectarine.

MRS. PINCE'S VINE SHOOT POINTS DEAD (C. Taylor).—This is not an uncommon occurrence with this variety of Vine, when the shoots have grown the length you have. We found shading with some light material a preventive. You must pitch-back to a healthy leaf, and the shoot will start again.

SCARING ROOKS (D.).—There is no better plan than to secure a winged one to a stake by string, moving it about, or it will answer nearly as well to suspend a dead one by the neck to a string between two stakes. A lad with a pistol, up soon and about late, will keep them off.

GRAPES SPOTTED (Lilly, Sussex).—All the berries you enclosed were affected by what gardeners name "the spot," an ulceration usually caused by a deficient supply of sap. Cut off at least six of the sixteen bunches, give the roots a copious watering with weak, tepid, liquid manure once a week, and mulch the surface of the soil over the roots.

PLANTING A CIRCULAR FLOWER-BED (Monitor).—We think your proposed planting of the circular bed very tasteful, and that it will look well, especially when the sun shines. Your edging of *Mesembryanthemum coridifolium* variegatum will look well in all weathers, and so will the patches of *Alternanthera* and the dividing lines of *Lobelia*; but though *Mesembryanthemum tricolor* is one of the best and is often good in dull days, in other dull days it may incline to shut its blooms up. We forget the properties of the *Mesembryanthemum pomeridianum* in this respect, but if it is one that only opens to the sun's rays the yellow segments will be defective. All such *Mesembryanthemum* bloom best in rather poor soil. But for these matters, of which we are in doubt, the proposed planting would be unique and look well; and we do not see how on that style you could improve it, except by increasing the fine triangles of *Alternanthera*, and thus relieving your variegated edgings.

YOUNG PLUMS IN ORCHARD HOUSE FALLING (C. B.).—The young fruit seem troubled with one evil, mildew; and we think a second, an attack from a small thrips. The first in an orchard house is generally produced from three causes—a deficiency of early ventilation, too much dryness or too much moisture at the roots. To keep things right, the law of reciprocity must ever be attended to. For instance: In a bright sunny day there is an extra demand on root action; and if the roots are then dry, the shoots, and especially the young fruit, will suffer, and there will be an invitation given to disease and the attacks of insects. On the other hand, in very dull weather such as we have lately had at times, deficient drainage and an extra soaking at the roots, just because the leaves will not carry on reciprocal action, will be apt to foster mildew and other evils. We would advise you to examine and see if there is any trace of mildew on the foliage. Some of our readers contend that too much moisture at the roots in dull weather is the chief cause of mildew; but over-dryness or what will produce a weakening effect will be just as likely to produce the evil. A twelvemonth ago we were asked to look at some Peaches and Plums in pots, the young fruit and many of the leaves being blotched with mildew. The soil seemed in a proper state as regards moisture, and we were assured the watering had been done with the greatest care, and that the roots had not suffered from excessive moisture nor dryness. We could from appearances hardly take this on trust, and opening our clasp knife we made a small hole 3 inches deep at the side of the pot, and beyond that depth the soil might as well have been kiln-dried. The mystery was at once solved. All the evils had come from a mere dribbling surface-watering. Thousands of plants find their resting-place in the rubbish heap, simply because the attendant cannot think of the propriety of trying the soil with his finger or a pointed stick, or ringing a pot to ascertain the state of moisture inside, and not merely at the surface. Attention to watering and air-giving is the great preventive. When mildew makes its appearance a fine dusting of sulphur is the best remedy. The next best, and also as setting thrips and green fly pretty well at defiance, is a good syringing with weak Gishurst water, less than 2 ozs. to the gallon. We should say 1 oz. or 1½ oz. of soft soap to the gallon, well dissolved in hot water, and any sediment left out, and that applied at not less than 100°. We would treat your trees with such an application now, first with sulphur and then with these washings. To encourage free growth and cleanliness, we would also recommend a syringing with a car root water two or three times a week. As respects growth it is invigorating, and if it does not kill the worst insects it helps to keep them away. We like to sniff the scent the clear root water leaves behind it. Like other good things it must not be used too strong. A peck of root and a pound or two of quicklime would be strong enough for thirty-six to forty gallons of water. The other day we put a barrowload of good dry soil into an old puncheon sunk into the ground, holding about one hundred gallons. That was worked up with a little water with an old broom into a pasty substance before the barrel was filled with water, and then a good shovelful of fresh lime was added, all stirred the broom again, and in twenty-four hours, after removing a little scum from the surface, the liquid if put into a bottle might have been mistaken for out a "ly;" but for most syringing and even watering purposes, a pail-

ful of such liquid would have required two other pailfuls to be added. We know of no better method for getting the properties of root in a liquid state as clear as the finest sherry. As there have been some inquiries as to the clear root water, these hints may not be out of place. Two things here we should like to notice. First, that one of the greatest safeguards for fruit trees in pots, as respects a medium state of moisture, is the frequent mulching of the surface in summer. It makes a great difference in the time of drying up the soil, although it does not dispense with all care in ascertaining the state of dryness beneath; and, again, owing to a press of other work, our orchard houses did not receive the usual care as respects washing, &c., but they have never been more free from insects, and many of the trees, as Peaches and Nectarines, have set but too much like ropes of Onions. Just before the buds began to move much, the trees, woodwork, &c., were well syringed with soft-soap water at about 170°, the water finding its way into most holes and crannies. They had little more at the top until the fruit was set, when they had several good washings with soft-soap water at about 140°, and in strength about 1½ oz. to the gallon, and since then they have been washed several times after a bright day with the diluted root water. We seldom think of syringing such houses in dull weather. After a very bright day it seems to refresh the trees. One word more. Our experience teaches us to depend more on early air-giving than on the mere quantity given late. A few hours' sun in the morning and a close house may do to incalculable mischief. With early air the house temperature may rise and fall considerably with safety.

HOES (Celia).—Some one of the implement manufacturers who advertise in our columns may have those you particularise. If they have not, any blacksmith could make them if shown the drawings.

PRIMULA JAPONICA AND AMARANTHUS SALICIFOLIUS CULTURE (R. F.).—You do not state in what condition your plants are, or whether you have seed. We presume the last. Sow the seeds at once in light fibrous loam, with a fourth of leaf soil, and place the pots in a frame with a gentle heat, keeping moist and near the glass. The *Primulas* may not appear until next spring; keep the soil moist, and in a greenhouse. When the plants are up and can well be handled, pot-off singly in small pots, and remove to a cold frame. The plants may be shifted into larger pots as those they are in fill with roots, and should be wintered in a frame protected from frost; or they may be planted in good soil out of doors. Keep the *Amaranthus* near the glass, potting-off singly when the young plants can well be handled, and return them to gentle heat, shading for a few days. Shift into larger pots as they fill with roots, giving them their final shift into 7 or 8-inch pots when the plants are 9 inches or a foot high. Grow in the greenhouse near the glass. Water freely when the pots are full of roots.

ASPARAGUS DYING-OUT (J. E. D.).—We do not think there is anything amiss either with the soil or your treatment, but we are inclined to think your beds are covered deeply with dung in autumn, and this is apt to form too much humus in the soil, and especially about the crowns, and hence decay. Have you tried sowing the seed? We find if seed be sown where the plants are to remain, that these are stronger than those which are planted, produce as quickly, if not sooner, and the plants do not go off. Sow in two rows a foot apart, with a 3-foot space between each two rows, and instead of manuring directly over the crowns, cover them with any loose, open, sandy soil, and manure the spaces between heavily. Cover the crowns in winter, as they are liable to suffer from frost if near the surface and grown in rich soil. Remove the soil partially in March, and point-in the manure in the spaces. Use salt as hitherto, and water as often as you can with manure water from June to the middle of September. We think you will not in future have any gaps. We find sea sand the best thing for covering the crowns, and river sand is the next best.

FERNS IN CASE NOT THRIVING (J. S. T.).—You do not say what kind of *Adiantum* you have under the glass shade. Taken from a greenhouse, we presume it is *A. cuneatum*, which, as a rule, does not thrive under a glass. We should have *Adiantum assimile* and *A. Capillus-Veneris* if you wish for Maiden-hair Ferns, planting the former in the centre and the others around it; about five plants for a case about a foot to 15 inches across; or, if you are not particular as to the *Adiantums*, have for the centre *Oncidium japonicum*, and around it *Pteris serrulata cristata* and *Adiantum Capillus-Veneris* alternately. The soil is quite right. We presume the vase has good drainage. Keep the soil moist, and the glass constantly over the plants. It should be taken off twice or thrice a week, wiped dry with a cloth, and replaced. Keep from direct sun, and turn the opposite side of the case to the light every week. We think your case will soon give you satisfaction.

REMOVING YOUNG GROWTHS OF AZALEAS (H. E.).—It is quite right to cut off the seed-pods of *Azaleas*, but a strange idea to cut away the small young leaves and shoots. Instead of that, encourage the plants by keeping them rather close, moist, and shaded from bright sun until their growth is complete, then admit light and air freely, and when the buds are set keep them cool and airy. As there are traces of thrips on the leaves, syringe morning and evening, and fumigate with tobacco on a calm evening when the leaves are dry.

POT CLEMATIS OUT OF DOORS (Idem).—The Clematis will grow very well in a pot or tub, and you may train the shoots to your house, but a mat will not be sufficient protection for the roots in winter. Wrap the pot or tub with hay or straw bands 6 to 9 inches thick, and cover with the mat for neatness.

ALYSSUM SAXATILE COMPACTUM SEEDLINGS NOT FLOWERING (An Amateur).—It is not unusual for seedlings not to flower well the second season. The freest-flowering plants are raised from cuttings, and in this way we advise you to obtain your plants for flowering next spring. Take off the cuttings at once, inserting them in sandy soil in a shady border. We do not know of a red-flowering perennial that would suit to edge a bed of Forget-me-not, except *Bells acubifolia*. Fleming's "Spring and Winter Flower Gardening" will suit you. It may be had free by post from our office for 2s. 7½d.

ROSES WITH COMBINED SHOOTS (An Amateur Subscriber, Hull).—Probably fasciated from disease at the root. If a great number of small shoots form at the base cut them off with a sharp penknife, leaving only the original stem or cutting. Your description is too vague to be able to give a definite answer.

MELONS FOR SECOND CROP (F. H.).—Treat the plants in exactly the same way as you would do if no second crop were expected, only you must keep some young shoots near the collar of the plants, and water until the fruit begins to ripen, when, of course, a dry atmosphere and rather dry soil is desirable. When the fruit has been cut prune-back the old vines to some of the young shoots near the collar of the plants, and with moisture they will soon form vines that will carry the second crop.

ALSTROEMERIA SEEDLINGS (Idem).—Plants from seed sown this year will flower next, or if the seed is sown early in heat, and the growth of the seed-

lings encouraged, they may flower late in autumn. They should be planted out 8 inches deep in rich damp soil, or if put in at a less depth they should be protected from frost in winter by a 3-inch mulching of partially-decayed leaves.

HEATING A GREENHOUSE (I. J. K.).—We should advise, as you can only attend to your house at distant intervals, to have a gas-heated hot-water apparatus, and four rows of 2-inch pipes along the front of the house—i.e., two rows of flow and the same of return pipes. They could join the boiler as a single pipe in each case, branching directly where the flow leaves and the return enters the boiler; or two rows of 2-inch pipes all around would do just as well. We should have the stove or boiler inside the house, with a pipe from it communicating with the external air. The Zigzag gas boiler is probably the best.

MULBERRY PROPAGATION (Spero).—Insert cuttings of the young shoots in autumn in sandy soil in a sheltered spot, leaving one or two buds out of the ground. "Truncheons," that is, branches of good size, taken from the tree in February, and planted a foot deep in a sheltered shaded place, make free-fruited trees. Wrap the moss round the stems above ground, but do not cover the upper two pairs of buds.

ASPARAGUS PEDS FAILING (G. P.).—The cause of failure we cannot possibly ascertain, as you do not state how the beds were made and have been treated.

REMOVEABLE GREENHOUSE (W. McA.).—If a greenhouse rests upon what carpenters call a plate of wood, without being fixed either to it or to a wall behind it, it is removable by the tenant who so constructed it.

BOWLING-GREEN AND CROQUET GROUND (Inquirer).—Full directions for making a bowling-green (and they apply to a croquet-ground), are published in our No. 468. The size should not be less than a quarter of an acre, nor should a croquet-ground be much less, if more than one party are to play at the same time.

MANURING ROSES (Jno. Watson).—Mineral manures are those which owe their fertilising properties to mineral ingredients, and not to carbon or vegetable matter—as nitrate of soda, phosphate of lime, chloride of sodium, &c. Sulphate of potash should be sparingly used. Nitrate of potash is preferable as more deliquescent, but both are expensive. The latter might be used occasionally at the rate of about 1 oz. to two gallons. The best way of using mineral manures as stimulants to plants is to put a handful of guano and the same quantity of superphosphate of lime into four gallons of water, and use it once or twice a week to the roots. Clear soot water is also good; it is made by stirring fresh soot in soft water, using the liquid when the sediment has settled and the mixture is like clear porter. It is better to dilute it. The vitriol-carboys you describe are, we know, very useful as propagating glasses when the base is taken off. John Gould Veitch as a double Clematis is not nearly so profuse a bloomer as Jackmanni, though it is well worth growing. Get Lord and Lady Loudesborough and Miss Bateman if you wish for free-blooming kinds to contrast with Jackmanni.

SELECT FRAGRANT HYBRID PERPETUAL ROSES (H. C.).—La France, Charles Lefebvre, Boule de Neige, Madame Knorr, Marie Baumann, Beauty of Waltham, Cheshunt Hybrid, Elizabeth Vigneron, Madame Charles Verdier, Bessie Johnson, Louisa Wood, and add Tea Gloire de Dijon, and as many others of the same class as you like, not forgetting Maréchal Niel.

BOUGAINVILLEA SPECTABILIS CULTURE (A Subscriber).—It succeeds in a cool stove or warm greenhouse, and in a compost of turfy loam two-thirds, and one-third leaf mould or turfy peat. Liberal supplies of water should be afforded when the growth is being made, but afterwards the plant can hardly have too little so long as the foliage is not affected. Too much light cannot be given, and the nearer the plant is to the glass the better, providing its shoots do not touch it. Free drainage must be afforded.

RED SPIDER ON DRACENA (D. C.).—Of the plants you send, No 1 is *Nephrolepis exaltata*, or it may be *N. tuberosa*. We cannot be certain from part of a frond. If the latter, it will succeed well in a greenhouse, but if the former it requires a warm greenhouse or cool stove temperature. No. 2 is *Pilea muscosa* or *Artillery plant*, and requires a stove. The "white scale" on the *Dracena*, or No. 3, is the result of red spider, for which the leaves should be sponged with 3 ozs. of soft soap to the gallon of water, at a temperature of 100°; use two sponges and draw the leaves through them, taking care not to injure these. This should be done once a week for a time. Give more water, and preserve a moist atmosphere. No. 4 is probably *Tremandra ericifolia*; if so, it will have rosy-lilac flowers in July or August. It ought not to be cut in like an *Euphorbia*, but be left its full length, restraining irregular growth by stopping; thin-out old weak growths in autumn or after flowering, and encourage the young. Keep the plants in a light airy position.

INSECT ON ROSE TREES (S. W. Wheelwright).—The insect is most probably the *Cucurlio oblongus*, or Oblong Rose Weevil. It is not easily got rid of. One way is to put white sheets or towels under the trees at night and give the trees a sharp tap or shake, when the insects will fall on the sheet. They may be slow processes, but hand-picking and this method are the only means we know to extirpate the pest. We must apologise for the delay in answering the question, as one of our correspondents to whom we sent your inquiry accidentally mislaid the paper.

ANTS IN CUCUMBER FRAMES (Moses).—We do not understand how ants can cause the *Cucurbit* plants to be infested with a sort of black fly. No aphid nor fly exists that will not yield to fumigation with tobacco. Neither tobacco smoke nor tobacco powder will destroy ants. Mix arsenic with honey in equal proportions, place in a shallow saucer, and cover with an inverted saucer of larger size raised at the edge so far from the soil that the ants can get under to the inner saucer, which should be sunk in the soil, or the edges brought so low that the ants can get over. Keep useful animals from the poison, which should be used with great care, as it will destroy whatever partakes of it.

INSECT (L. Y. Y.).—The insect sent is the very common Puss Moth (*Cerura vinula*).—I. O. W.

NAMES OF PLANTS (Spero).—*Omphalodes verna*. (D.).—1, *Veronica Chamædrys*; 2, *Myosotis*; 3, *Nepeta Glechoma*; 4, *Cerastium triviale*; 5, *Geranium molle*. (H. Ritchie).—Some *Crataegus* or *Pyrus*, but impossible to say further without flowers. (M. D.).—1, *Davallia* sp.; 2, *D. dissecta*. We cannot name florists' varieties of *Azalea*. (M. R.).—1, *Aspidium lucidum*. (No number), *A. acrostichoides*; 4, *Aspidium coriaceum*. We cannot answer your question further than by saying that specimens should always be as complete as possible. (T. W. H.).—1, Probably *Oxalis megarhiza*, as we before observed (page 381), but we cannot be quite sure without seeing root; 2, *Diplotaxis tenuifolia*; 3, *Hibbertia*, probably *linearis*.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY PAST AND PRESENT—THE LAW OF DEVELOPMENT.—No. 2.

IN some remarks under this heading the other day I tried to show, that as in breeding fowls for any object whatever, certain accepted standards must be presupposed, so in breeding for shows, where birds must be judged as they appear in pens, those standards must, from the very nature of the case, be visible ones, and therefore more or less arbitrary. If this be clearly understood it will also make clear my meaning in the few remarks I made on Game, and show where, in my judgment, there lurks some little fallacy in the arguments of "Old Black Red" and "Cornish Duckwing." Let me try to make it plain.

If long experience in breeding, slowly acquired by countless breeders, has proved anything, it has proved that in breeding we cannot attain all objects at once. To think we can is a common mistake of novices, but all old breeders know otherwise; and one of the most valuable remarks in Eaton's queer but fascinating book on the Almond Tumbler is that in which he warns the young fancier against trying to breed for "all five properties" at once. We may get a fair average of many excellencies, but we can only get the highest excellence in one point at a time. The old Game-breeders knew this well, and hence, in breeding for the pit, they crossed all colours, their only object being to get birds that would fight the best. To this cause were owing the forty or fifty different colours known to the old cockers; they came from various crosses and sub-crosses between different colours, the object being not colour, but to keep up or increase the vigour, quickness, and endurance of the race. The breeders succeeded to such a degree in developing the fighting power and disposition of their birds, that not a few were useless from actual excess of it, turning so savagely on their own handlers as to give advantage to the adversary. But this could not be done with what a fancier calls "high breeding" as to feather and beauty of shape; and it will be clearly seen, on careful reading, that many of the questions asked by my friendly opponents as to the old Game fowls refer them to the old standards, which in a pen cannot be applied. "Old Black Red" asks, "Were we not pure?" Yea. "Were we not courageous?" Yes, emphatically. But when he asks, "Were we not equal in colour and as perfect in feather?" I should myself reply, No, decidedly. It may be matter of opinion, but my only assertion was that breeders, the public, and the judges gave the preference to the modern fowl. Can this be disputed? "Old Black Red" does not give this preference, and there are others who do not, but certainly the public do, and breeders as a body do. I remember well when, after our old friend "Newmarket" had been airing his views on Game fowls pretty freely, he added how much he admired Mr. Chaloner's birds, and Mr. Chaloner immediately replied, stating that as his name had been mentioned he felt bound to say how entirely he dissented from "Newmarket's" opinions. And, except in case of admitted mistakes, it is surprising how unanimous the opinion of Game-fanciers is in picking out the best birds at a show. I have almost invariably found that when anyone complained about the "old" style being lost, he was one who openly or on the sly yet followed the old "sport," which will, I hope, soon be a thing of the past.

I am not going to maintain that our modern Game fowls would fight as well as the old ones. "Cornish Duckwing" says they would not, and it must be so; for just as the old cockers, in seeking fighting qualities, were obliged to sacrifice in other points, so in seeking the greatest beauty we cannot retain also the greatest fighting power. To maintain otherwise would be to fall into the very same mistake. While fowls are fought as well as shown there may be a high degree of both merits maintained; but once let fighting be entirely abandoned, and the very means by which the selection was made that kept up the fighting of the stock is lost, and some of the fighting must be lost with it. But this does not imply Malay or other cross; it simply implies that what is no longer sought will diminish; for in breeding no quality can be kept up unless it be carefully and assiduously sought: hence our Game fowls, unless they are to be fought, must by degrees change their type; and while their ancient blood will, probably, ever secure a high degree of courage, the strength and other qualities which made them conquer cannot be kept up without the old tests. The correspondents "Cornish Duckwing" refers to, on the very face of it, wanted birds for fighting. I never implied that the modern birds were so good for that, and I would not greatly care for them to be, for, unless they are to be fought, what good is it? We do not wish a highly-cultured nobleman's son to have the powers of a prize-fighter, and yet in time of trial he may have all the real courage and more, while his higher qualities may be thought worth at least as much as the powerful fists of the other.

I certainly have seen cross-bred Malays, but I must add my opinion that they are not nearly so numerous as often alleged, and that I do not think they very often win the prizes. I cannot compare with many of our esteemed contributors in knowledge of Game, but on account of the alleged part Malays were said to have had in the formation of Brahmas, I have had occasion to pay much attention to the effects and signs of a Malay cross, and I can say that it is not at all easy to breed-out all signs of it for several years. The short head alone is easily got rid of—indeed, many Malays themselves have very long heads; but the peculiar eyebrow is very apt to linger, and there is the Malay hock, the scaling of the shank, and the peculiar gait, all to be considered. Any one of these may be got rid of almost at once; but it is very hard to stamp out all of them, and by one or the other the taint may usually be detected for several years. I feel satisfied that the change in the vast majority of cases is entirely owing to successive years of selection for the new standard of the show pen, and that most of our prize birds, though, no doubt, inferior in fighting power as a rule (I say as a rule, because cases are known of their fighting and winning), are perfectly pure Game. Increased beauty alone has been sought in certain definite directions. I think it has been gained; at all events, the fowl is to some extent changed.

The applications of this simple law of development to general breeding I must leave for one more paper on the same subject.—L. WRIGHT.

GLASGOW AGRICULTURAL SOCIETY'S POULTRY SHOW.

This was opened on the 21st inst. The following awards were made:—

DORKINGS.—1, H. Heys, Barrhead. 2, H. C. Deedes, Airdrie.
BRAMA POOTRA.—1, H. Wyse, Bishopbriggs. 2, R. Frew, Sinclairtown, Kirkcaldy. 3, W. Good, Airdrie.
COCHIN-CHINA.—1, T. Bruce, Busby. 2, J. Pollock, Busby. 3, J. Stevenson, Airdrie.
HAMBURGS.—*Golden-spangled*.—1, D. Beaton, Waterfoot, Busby. 2, J. Jardine, Kilmarnock. 3, H. Taylor, Whitevale, Glasgow. *Golden-pencilled*.—1, A. Bachagoan, New Kilpatrick. 2, J. Dawson, Ardmore, Cardross. 3, R. Frew. c, D. Gilmour, Kilmarnock.
HAMPSHIRE.—*Silver-spangled*.—1 and 2, R. Cameron, Stewarts. 3, J. H. Macnaab, Barrhead. *Silver-pencilled*.—1, J. Stevenson. 2, A. Cowan, Maryhill. 3, J. Hunter, Strathbungo.
SPANISH.—1, A. Walker, Kilmarnock. 2, A. Alexsoder, Pollokshaws.
SCOTCH-GAYS.—1, J. Pollock, Walton, Mearns. 2 and 3, J. Thomson, Glasgow.
GAME.—1, G. Williamson, jun., Johnstone. 2, J. Stewart, Old Kilpatrick. 3, J. Allison. c, M. D'Onghall, Old Kilpatrick.
BANTAMS.—1, R. Frew. 2 and 3, J. Denholm, Musselburgh. 3, J. D. Birrell, Glasgow.
ANY OTHER VARIETY.—A. McLea, Barrhead.
DUCKS.—*White Aylesbury*.—H. Heys, Barrhead. *Rouen*.—M. Henderson, Ardross.
TURKEYS.—1 and 2, J. Houldsworth, Coltness, Wishaw. 3, A. G. Graham, Bardowie, Milngavie.
EXTRA.—*he*, W. McFarlane, Dumbarton; Hon. Mrs. Campbell, Blythwood, Redferr.

JUDGES.—*Poultry*: Messrs. J. Gibson, Woolmet Dalkeith; W. M. Gilmour, Exchange Buildings, Greenock; and Charles Muirhead, 79, Queen Street, Edinburgh.

PENRYN (CORNWALL) POULTRY SHOW.

FORTUNATELY for the welfare of this Show, held on the 21st and 22nd inst., an ample tent was provided for the Exhibition, and consequently both poultry and Pigeons enjoyed perfect immunity from a constant day's rain. The feeding and general attention were ample. The *Spanish* class was extraordinarily good for so late in the breeding season; Bristol exhibitors were the prizetakers. Many very excellent *Game* fowls were competing, but imperfect feet seemed too general. Mr. Julian obtained the Game cup with a splendid pair of Brown Reds, that had been sent from so great a distance as Hull by their spirited owner. Some good *Hamburgs* were shown, but many of the cocks were stained with white in their faces, a fault all careful exhibitors should constantly guard against. *Polands* were a strong and capital entry. In a class for Indian Game a large entry contained several first-rate specimens, many of the cocks being dubbed, as English Game fowls usually are. The *Rouens* were the best of the *Ducks*, and a grand pen of Saddle-backed *Geese* were first-prize winners; the second going to a very fair pen of Toulouse. Mr. Yardley, with an entry of eighteen pens of *Pigeons*, proved quite a monopolist of the prizes in this division of the Show. It is worthy of note that a very creditable pen of Black Cochins was exhibited in admirable show condition at Penryn.

DORKINGS.—*Coloured*.—1, J. H. Nicholls, Lostwithiel. 2, O. Vincent, Truro. 3, R. W. Beecher, Kingskerswell. *Any other variety*.—1 and 3, J. H. Nicholls. 2, M. J. Vivian, Bodmin.
COCHINS.—*Partridge and Brown*.—1, A. C. Travers, Falmouth. 2, J. H. Nicholls. 3, G. Lisa, Par Station. *Any other variety*.—1, S. R. Harris, Cus. Yard. 2, W. George, Falmouth. 3, J. H. Nicholls, Lostwithiel. *he*, S. W. Probert, Lostwithiel. c, Mrs. Christie, Devon; G. Nicholls.
BRAMAS.—*Dark*.—1, T. H. Waterman, Devonport. 2, S. Allen, jun., Plymouth. 3, J. H. Reed, Calstock. c, W. Dennes, Gannislake. *Light*.—1, J. Nicholls. 2 and 3, H. Pearce, Totnes.
GAME.—*Black Reds*.—1 and 2, W. Bullmore, Falmouth. 3, E. Pope, Falmouth. *he*, H. Julian, Hull. c, H. Browne, St. Austell. *Brown Reds*.—1 and Cup, H. Julian. 2, E. C. Pope. 3 and *he*, H. Browne. *Any other variety*.—1, H. Brown

(*Duckwings*).—2, H. M. Julian, Hull. 3, E. C. Pope (*Duckwings*). *Malay and Indian*.—1, J. Palmer, Looe. 2, J. Blamey, jun., Penryn. 3, J. Bone, Liskeard. *he*, Miss Avery, Liskeard; T. Lecher, Camborne.
SPANISH.—1 and 3, J. Boulton, Bristol. 2 and *he*, Mrs. Tookin, Bristol. c, S. R. Harris, Cuscarne.
HAMBURGS.—*Gold-spangled*.—1, S. R. Harris. 2, J. Clarke, St. Day. 3, N. Barter, Plymouth. *Silver-spangled*.—1, J. Clarke. 2, H. Feast, Swansea. 3, S. R. Harris. c, N. Barter.
HAMPSHIRE.—*Gold-pencilled*.—1, T. Edmonds, Totnes. 2, S. R. Harris. 3, G. Packham, Exeter. *Silver-pencilled*.—1 and 3, N. Barter. 2, S. R. Harris.
POLANDS.—1, S. W. Probert, Lostwithiel. 2, R. Sampson, St. Austell. 3, H. Feast, Swansea.
FRENCH.—1, J. H. Nicholls (*La Flèche*). 2, S. W. Probert. 3, W. Humphreys, Liskeard. c, J. H. Nicholls; E. Barchet, Bodmin; H. Feast, Swansea.
ANY OTHER VARIETY.—1, E. T. Newtoo, St. Day (*Black Cochins*). 2, H. Feast (*Black Hamburgs*). 3, S. W. Probert (*Sultans*). *he*, S. R. Harris (*Black Hamburgs and Ancoas*); Miss Hawker, Boscawen (*American Dominiques*). c, S. R. Harris (*Black Minorcas*).
BANTAMS.—*Game*.—1, N. Barter. 2, G. Cruise, Gunnislake. 3, W. Currah, Tywardreath. *he*, H. J. James, St. Columb. c, E. Commins, Bodmin; J. Honey, St. Austell. *Any other variety*.—1, C. Petherick, St. Austell (*Gold-laced Sebrights*). 2, J. H. Nicholls (*Black Rosecomb*). 3, W. Willie, Liskeard (*Cuckoo-marked Japanese*). *he*, S. W. Probert (*White-booted*) (2); R. Clogg, Liskeard (*Sebrights*).
DUCKS.—*Aylesbury*.—1, S. R. Harris. 2, Withheld. 3, J. Blamey, jun., Penryn. *Rouen*.—1, H. Browne, St. Austell. 2, J. H. J. Hoyt, St. Austell.
TURKEYS.—1, Mrs. Gilbert, Bodmin.
GESE.—1, P. Kunczyk, Mabe, Penryn. 2, J. H. Nicholls. *he*, M. Kew, Rutland.

SILVER CUP FOR MOST PRIZES IN POULTRY CLASSER.—J. H. Nicholls.

PIGEONS.—*Carriers*.—1 and 2, H. Yardley. *Pouters*.—1, G. Holloway, jun., Stroud. 2, H. Yardley. c, G. Packham, Exeter; K. H. Blamey, Penryn. *Barbs*.—1 and 2, H. Yardley. *Fantails*.—1 and 2, H. Yardley. *he*, F. Braund, Bideford; W. Mudge, Paington. *Tumblers*.—1 and 2, H. Yardley. *Turbits*.—1, H. Yardley. 2, J. Crooke, Exeter. c, R. H. Blamey. *Jacobins*.—1, R. H. Blamey. 2, F. Braund. *he*, H. Yardley. *Guinea*.—1, F. Braund. 2, H. Yardley. *he*, R. H. Blamey. *Any other variety*.—1 and c, H. Yardley (*Brunettes*). 2, F. Braund (*Mottled Trumpeters*). *he*, R. H. Blamey (*Magpies*); W. Mudge (*Trumpeters*); G. Packham.

Mr. Edward Hewitt, of Birmingham, was the Judge.

YOUNG CANARIES IN AVIARY.

In a garden aviary of some twenty or thirty Canaries where the birds make their nest in bushes trellised to the hack wall, there are many young birds thriving in spite of the cold season, some flying and others fledged, but unable to rise from the ground after leaving their nests. One of these is found sometimes in the morning dead, and stripped of every feather on the body. They are well fed with egg and bread, greens and seed. They have been watched during the day, but no attempt at mischief has been detected. The old birds constantly feed the young even after they fly.—J. M. ST. JOHN.

[The misadventures to which you refer are inseparable from breeding Canaries in a large aviary. There is no doubt that the Canary can stand any extremes of heat or cold to which our climate is subject, and can stand them better when acclimatised by out-door exposure than when nursed in an artificial atmosphere; but from long-continued artificial treatment, the Canary has lost, at any rate partially, many of the traits of character belonging to wild birds. For instance, if by accident a young wild bird fall from the nest, or, from being disturbed, should attempt to fly before it could well manage to accomplish the feat, and should land on the ground unable to do more than make a respectable flutter, the old ones would be in such a state of commotion as would speedily call attention to the fact. But when one of your aviary birds meets with a similar mishap, his parents, friends, and acquaintances at once commence to strip him, and then leave him to die from exposure. Very unnatural treatment, but there is no cure for it except, when you observe a young bird has found its way to the ground, to replace it in the nest as quietly as you can without disturbing the others. If it be a sensible little bird and has seen enough of the coldness and want of sympathy in the outside world, it will nestle in at once, but the probability is that its experience will have taught it nothing, and it will hop out again in a most provoking manner in search of further adventure. Inasmuch as one sickly sheep frequently infects the flock, the force of bad example may unsettle the rest, and a general scramble result some days before the nest might have been expected to leave the family roof. I do not mean to say that similar mishaps do not occur in ordinary breeding cages, but there are greater facilities for a young truant finding its way back to its nest than in a large aviary. The perches are not so high for one thing, and if an extra perch be put in as a stepping stone, a young bird is sure to try to reach the top of the ladder to roost, and will then almost always pop into the nest again. It is very distressing to see the way in which the hen will sometimes strip the young ones in the nest, but she is much less apt to do so than when a miserable-looking little mortal is huddled up on the cage-bottom trying to seek some sort of shelter in any corner. To such unfortunate the cock is generally very kind, and rather seems to like being bundled about the cage by a child nearly as big as himself, till, driven into a corner and forced back on his tail, like a horse on his haunches, he feeds freely as a sort of toll for liberation from his position. Somehow the cock never seems to lose his parental instincts, but the hen does, in strange contradiction of our ideas of the affection of the feathered tribe for their young. And when persecution once begins, from whatever source, friends and

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 5—11, 1873.	Average Tempera- ture near London.			Rain in 43 years.	Sun Rises.		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.		m.	h.				
5	TH	Royal Horticultural Society's Great Show [closes.	70.5	47.3	58.9	24	47	af 3	9	af 8	54	1	35	1	156
6	F		69.9	47.6	58.8	22	47	3	10	8	6	3	47	1	157
7	S	Jungermann died, 1653.	69.3	46.5	57.9	25	46	3	11	8	21	4	0	2	158
8	SUN	TRINITY SUNDAY.	70.6	46.4	58.5	15	46	3	12	8	40	5	15	2	159
9	M	Meet. of Royal Geographical Society, 8.30 P.M.	70.8	47.2	59.0	20	45	3	12	8	2	7	35	2	160
10	TU	Royal Botanic Society's Show opens.	69.6	46.9	58.3	19	45	3	13	8	23	8	1	3	161
11	W		72.1	47.6	59.9	13	45	3	14	8	37	9	38	3	162

From observations taken near London during forty-three years, the average day temperature of the week is 70.4°; and its night temperature 47.1°. The greatest heat was 99°, on the 6th and 7th, 1846; and the lowest cold 30°, on the 11th, 1865. The greatest fall of rain was 1.48 inch.

EVENING MUSINGS FOR PLAIN PEOPLE.—No. 5.

VINES.



ONE of the most formidable impediments that the inexperienced encounter in growing their own Grapes, is a widely-disseminated and accepted notion that one of the absolute necessities of the case is an expensive border. It is necessary to be dogmatic sometimes, and I say that nothing of the kind is needful. To grow fairly good useful Grapes, such as hundreds of people with comfortable

homes and good gardens are longing for, an expensive border is not really required in one case out of ten. There is a notion abroad amongst would-be Grape-growers that if they could have turf cut from some gentleman's park five to ten miles away, their difficulties would be at end, and good fruit would follow as a natural consequence, but without the aristocratic turf the project is hopeless. Against this I will venture an opinion that the soil producing that gentleman's Grapes is not composed of turf from his park. No, no. Gardeners, as a rule, are not indulged in that way. They must provide Grapes without digging a park up, or — not but what the park turf would be very valuable, and its removal, if made good by fresh soil and seeds, be no loss — but no matter, it is "park," and that is enough, and it must not be touched. But a sensible man will not force a quarrel with a person standing firmly by his own, but will look out and get the best he can in other ways, and even then if he fail he may console himself with the thought that he has a prohibited park for a scapegoat to bear any possible sins.

As long as I am a gardener I shall never fight for a bit of park, and this is the reason why. I once served under a gardener who could not please with Grapes. Border after border had been made until the cost, according to the owner, reached £100. The park was a standing defence with the gardener, who, in an impolitic expression, told the owner he did not deserve to have Grapes as long as he kept a consecrated park. "Fetch it in," was his reply, "and try again; but mind, for the last time." He tried and failed. Another took his office, and without any apparent difficulty produced satisfactory Grapes. First-class Grapes cannot be produced without a first-class border, and, mark this, not then without otherwise first-class treatment; but inferior Grapes may be grown, and are grown, in really excellent borders by the want of proper in-door management and suitable attention timely given.

In some places a singular fatality would seem to attach to all efforts at Grape-culture. An estate of, it may be, 20,000 or more acres gives a choice of soil for a Vine border, yet first-class Grapes do not follow. Many instances of this kind are found in, perhaps, every county in England. Is the soil in these several cases wholly to blame? It will grow all kinds of trees useful and ornamental, and yet not produce Grapes. Still the Vine is not a miffy, capricious, fanciful-feeding plant in its nature,

but is, in this respect, as accommodating as most things. Is it not possible that many Grape failures arise from incorrect inside management, and the borders unjustly bear the blame? Many a condemned border would, I am assured, prove its innocence could it have a fair trial by an unprejudiced judge. A very easy means of testing the border of an unsatisfactory house of Grapes is to train a shoot or shoots outside the house on the warmest aspect at command. If this outside growth is attended to by pinching the laterals and stopping the terminal shoot at the end of August, to arrest further extension and encourage the wood ripening, it will prove the next season, by either bad or good produce, whether or not it is the border or the inside treatment that demands improving, and will afford a useful hint for future guidance. I have more than once seen the benefits resulting from this exceedingly simple and absolutely costless experiment. "But," it may be said, "it is quite natural that this fresh young outside shoot will bear, while the older crippled stems of the Vines inside cannot be expected to do so to the same extent." A prompt "hear, hear," to a remark like that, because it at once admits a fault and acknowledges a remedy.

Before proceeding further, I will lay it down as an axiom that while the Vine is very tractable and accommodating in its nature, it will not submit to any mere rule-of-thumb treatment with continued and unvarying satisfaction—that is, the same routine suitable to one house of Vines is not only not the best for all, but does not always continue to be the best for the Vines and house in question. For instance, Vines will for a number of years afford good produce managed on the short-spur system of pruning, but unless a very high and intelligent system of culture is continuously pursued a blank by this system will sooner or later occur. That an obstinate (I can call it nothing else) adherence to any single plan or system is neither advisable nor profitable, many a fine range of unproductive vineries plainly proclaims. I do not say a word against the spur-system as a system, for I know by experience that it will afford splendid Grapes for I cannot say how long, providing there are no omissions and mistakes in other points of culture. But the same experience also tells me—and I cannot disregard its teachings—that it is not infallible, and that when it fails and is still persevered in there is a suspicion of evidence of something that I should like to call by a milder name than prejudice or stupidity. More particular reasons as to the cause of the frequent breakdown of this particular system may eventually be submitted, but in the meantime it is only mentioned as illustrative of the proposition that a single formal stereotyped mode of culture is not reliable in all cases to produce really useful and satisfactory Grapes.

I will now revert to the primary object of this paper—that an expensively made border is not necessarily an indispensable and absolute condition in the production of a useful supply of this much-coveted fruit. This is proved in general by the excellent Grapes grown in almost every district in the absence of elaborate and expensive border-formations. It is more particularly proved—and always

capable of even local proof—by noting the progress, and the character of that progress, which a Vine will make planted outdoors in the ordinary soil of the garden. One need never hesitate to speak of a fact, and this is a fact, that I have never yet seen a soil that would grow the ordinary out-door fruits in a satisfactory manner that refused to grow a Vine when one was planted. When I was younger than I am now I had a habit of sticking Vines in all sorts of soils and watching results, and it was remarkable to notice how exceptional were the instances in which a complete, or even anything approaching a complete, failure was the result, and they never occurred in a good garden soil where other fruit trees grew well. "That," it may be said, "is only evidence as to growth, and not fruit, which are not always correlative." Granted, but not unconditionally. It is true that Grapes do not always follow a free Vine-growth, but not much less true that there might be fruit where there is no fruit under more correct guidance, and such as the Vine itself will, in most instances, foreshadow if we will but read its index aright. Presuming that there is a healthy Vine freely growing in the open air, say a Black Hamburg; provide it with adequate glass shelter, and who will say that with proper inside treatment that Vine will not bear fruit? Instead of no fruit the probability is that it will yield such an example as will explode a too common notion—that to have Grapes worth looking at and worth eating, an expensively-made border is a prime necessity.

I am of opinion that the natural capabilities of the Vine are not pressed to the front in such a way as its merits demand, or commensurate with the advantages which would be the direct outcome. I do not wish to be misunderstood. I am no antagonist to a thoroughly-made Vine border, knowing that the highest forms of Grapes can only be expected from a high order of border formation. I am not presuming to teach those deeply learned in Grape lore, and whose aim is perfection, preferring to assist those requiring aid in a supply of not perfect but useful Grapes. I should like, in the interests of this large class, to assist in knocking down some barriers that time, fancy, and prejudice have set up, and in clearing away some impediments so expensive as to be prohibitory of this princely and popular fruit in places where it ought to be. I should like it to be known, that hundreds of people who have them not now, may have Grapes on their tables, and enjoy them the more as being their "own growing."—J. WRIGHT.

A FEW WORDS ON WHITE FLOWERS.

Or the many hues which Flora in her sportive garb presents us with I have a decided partiality for white, not a dirty dingy white like an unwashed garment, but a clear pure white, free from any discoloration, my model in this respect being the white Camellia. Cannot some of our great Rose-growers present us with one of their so-called queens of flowers in as high a state of purity as this Camellia? Catalogues without number seem to have exhausted all the terms applicable to the various tints the Rose assumes, yet a clear undefiled white we have not yet, for a slight tinge of pink or flesh colour pervades all the whites I have seen or heard of. The same remark holds good in regard to the Dahlia, only the latter is tinged with green instead of pink; still I believe that now and then Dahlias are met with approaching more closely to the standard I have put forth, and where a stand possesses a really good white Dahlia, that flower, in my opinion, carries a degree of weight with it equivalent to three or four lilacs, reds, or yellows.

But it is not to the white-flowering varieties of these two kinds of flowers alone that I desire to call attention, it is to white flowers of all kinds; and there are some whites that really rival the Camellia in purity of petal. Take, for instance, a Cherry tree; when in full bloom what can look richer? Whether it be a wild or cultivated Cherry it is still a handsome object at a long distance as well as close at hand. Scarcely less pure is the Pear and some of its congeners; while we must not omit to notice the ever-beautiful though not unmingled colouring of the Hawthorn, which, from its abundance, may be regarded as one of the most ornamental of our flowering trees, and but for the autumns its flowers would be a very creditable white. Even as it is, in my opinion the white far exceeds the pink varieties, and the double white is superb. Then we have the Bird Cherry, a wild flowering shrub of no mean pretensions, also a good white; while, later, and when all spring frosts are said to be over and established summer

coming on, the Elder presents us with its numerous umbels of creamy white, showing to great advantage a full half-mile, and towards the dusk of evening looking like so many luminaries appearing in the horizon. Later on we have the Sweet Chestnut with its peculiar inflorescence planted in front of foliage of the brightest green; while amongst smaller shrubs the white Lilac, Mock Orange, and Deutzia could not be arranged in more becoming colours. The Deutzia, especially, is very fine, yet I am not sure that it is really more handsome as a distant object than that much-neglected shrub the Gueldres Rose. Others could be added, but I will omit them for the present, and descend lower, and see what small plants do for us in this way.

First of all we have the Snowdrop, the white Crocus, the single white Primrose. Following these we have *Arabis albidula*, a very suitable companion to the earliest Forget-me-not, and quite as useful in every way. Bulbs of various kinds may also be flowering at the same time as this *Arabis*, there being a tolerably good white in Tulips, as well as in the Hyacinth, Narcissus, and Anemone, and the wild Anemone of our woods must not be overlooked. As the season advances white flowers become too numerous to mention, and I will therefore content myself with naming only one or two more, and amongst these is *Iberis corifolia*, a very pretty white. Perhaps the prettiest of all is the common white Lily when seen in a cottage garden in the dusk of the evening, backed by the healthy foliage of the Gooseberry trees in its vicinity. The Meadow Sweet is less pure in colour, yet still admissible, while perhaps the purest white flower we have, next to the Camellia, is the white variety of the Indian Azalea, which for purity of hue cannot well be excelled. Later in the year we have also good whites in some of the varieties of China Asters and several annuals.

I am not acquainted with a really good white in Geranium, Petunia, or Verbena. It is true there are so-called whites, but they are more or less tinged with some other colour, and consequently look badly when seen in masses, as these flowers are expected to be, a sort of greenness pervading them all more or less, and the same may be said of Lobelias and Pentstemons, as well as Ageratums, the latter having a somewhat dirty tint; in fact, really good clear white flowers are not by any means so plentiful as some suppose, and it is not too much to ask for something more clear and distinct among white flowers, for, whether in winter, spring, summer, or autumn they seem equally welcome; and for contrast with the naked ground, the young or advanced foliage, or with the decaying tints of autumn, a clear spotless white is always acceptable. Witness a white Chrysanthemum, how well it looks; be it seen either at noonday or by artificial light in the evening, it is equally beautiful. There are other purposes to which a white flower seems also indispensable—a bouquet would only present a dull and cheerless aspect were it not for the white flowers which light it up; and the interest with which our fair friends look upon a bridal bouquet, when shown as it sometimes is at horticultural shows, proves that they regard white as the first and most important of all colours.

I make no apology, therefore, for calling on those who have done so much in the way of embellishing our flower gardens with the brightest of yellow, scarlet, pink, and other hues, to try to supply us with a white Geranium equal in the clearness of its colouring to some of the scarlets now so plentiful. In like manner I ask for Petunias and Verbenas to be also improved, or, if need be, some other continuous-flowering plant that possesses the necessary qualifications to be substituted for them, for it must be borne in mind that in most cases the object sought for in white in the fashionable parterre has been supplied in foliage and not in flower. Although foliage is very good in its way, I imagine that fashion will ere long take another turn and flowers be again in the ascendant. As stated at the beginning of this article, I place white first in my list, and I should be glad if more of the plants I have named, as well as many others, approached the standard of purity that I have laid down. Although I was once informed by an eminent paper maker that he could make paper whiter than the purest of snow, the latter will quite satisfy me, and flowers equalling that are not yet to be had.—J. ROBSON.

THE FRENCH WATERING POT.

In Mr. Record's article on the contrivances used for watering he has alluded to the French watering pot and the peculiar manner in which the handles are placed, but I think he has not given the true reason for this position. Anyone who has

seen the French market gardener at work watering will at once see their suitability. In the French gardens the water is almost always in open tanks; and it will be at once seen how easily a man can take two of these cans, dip them in the water and fill them; and when he arrives at the bed which he wishes to water he manages, without ever putting them on the ground, by a dexterous shift of the hand, to put them in the proper position for watering—in fact, he rarely ever stands them on the ground all the time he is using them.—D., Deal.

PYRAMIDAL FRUIT TREES.

THE following remarks are intended primarily to meet the case of a correspondent, "S. B.," who inquires what he is to do with the young shoots of pyramidal Pear, Plum, and Cherry trees that now vary from 3 to 12 inches in length, how much of such shoots should be cut off, and how to regulate them for the season? He also asks for some remarks as to the general management of such trees, so as to obtain the greatest amount of good fruit, consistent with healthy, in opposition to rampant growth.

Perhaps from my own practice I should have been able to advise better if I knew the size and age of the trees, and the state of growth as respects luxuriance, and what may be termed mere stunted yet healthy growth. Let it be laid down as a general principle that the extreme of luxuriance and the extreme of fertility will never unite in the same fruit tree, at least for a continuance. Over-free growth and over-production of fruit or seed will ever act in opposition to each other.

There are a few fine Wych Elm trees that I see daily, with fine heads rarely to be equalled, and many have admired them lately, as every twig is densely clothed with bunches of the bladder-winged seed vessels. So much is this the case that many of these twig branchlets have no growing point at the end of them. To me it is a matter of regret to look on this excessive fertility. It speaks as plainly as any words can do that the trees are declining in strength and vigour, and that if means be not taken to increase vigour of growth, this excessive fertility, as an effort of nature to continue the race, will at last end in the weakness of growth and the death of the trees.

We have seen fruit trees not so old that pined away from excessive fertility, merely because the growing principle had been too much crippled to insure excessive fruit-bearing. It is easy thus to carry any mode of treatment to an extreme. In our moist climate the arresting of free growth, so as to get the wood well ripened, will not be so likely to be carried to an extreme as the encouraging of free growth, which is the surest means of preventing early and abundant fruitfulness.

One great advantage of the dwarf pyramidal and bush system of growing fruit trees is, that if properly managed, the fruit-yield is early and continuous; and a second great advantage is, that if the trees are not more than 6 or 7 feet in height the fruit can be easily gathered, and a great many trees can be collected in a small space, thus forming an orchard of small trees easily protected. With planting near the surface and summer-pinching to arrest free growth, instead of planting a Pear tree to yield fruit to sons and grandsons, the shoots of the tree, if moderately ripened, may be made to yield fruit in the second year, and by such planting and nipping, and root-pruning when there is a tendency to over-luxuriance, a single shoot or stem from a root may, for the space it occupies, be as fruitful in proportion to its size, nay, much more so, than a large orchard tree that only attains in general the extreme of fertility in fruit-bearing when, like the Elm trees referred to, it shows signs of age and decay.

In the case of young pyramidal trees and bush fruit trees I should incline to let the shoots grow longer without stopping, in order that the head might be formed more quickly, though by that practice I should have less fruit for a year or two, even if the luxuriance of growth had to be diminished by lifting and replanting at the end of October, or root-pruning at the same time. Any of these operations, however, will not be required more than once, or never require doing at all if free growth is arrested by shallow planting, early stopping of the shoots, and enough of strength given by surface-mulching to encourage the roots to keep near the surface. If you wish a Pear tree to be extremely fruitful, let the roots be at no great distance from the surface. If you wish to have a splendid Oak tree as to size, see that the roots can get down as they like in good soil.

The mere pruning, then, of these pyramidal trees of "S. B."

in summer is only a part of the system that will insure success. It does much to encourage fertility by the curbing of extra luxuriance, and with planting shallow and on raised hillocks, with surface-mulching, nothing more will be required. In all such cases, however, we disapprove of "cutting off" the points of the shoots in summer. It is better in every way merely to nip out the point of the shoot—the growing axis, as it were, with the thumb and finger or the point of a small knife. This effectually checks mere elongation of growth, and yet gives no great check to the system of the plant. When the shoots grow so long as to require to be shortened by the knife, the relative action between roots and branches is for a time arrested, but the roots having obtained vigour from the free growth above, that vigour will spend itself in swelling and bursting the buds on the shortened shoot into useless spray. If such shoots had the points nipped out early, a few of the buds near the point might push, but the bulk of buds behind would remain stationary, and with plenty of sun and air the lower buds would be formed into fruit buds in autumn. Supposing, then, that these trees of "S. B." are fully half their allotted size or more, I would allow the leaders to grow 18 inches without stopping. If the trees were about their full size, I would stop at 6 inches by nipping out the points. All the other shoots 12 inches long I would stop at once. Those side shoots required to form the tree I would stop at from 12 to 15 inches in length. Those now 3 inches long I would stop when they were 6 inches long, merely nipping out the point of the shoot. If stopped shorter, and there is fair vigour of growth in the tree, the buds on the shoots lower down are apt to burst into useless spray, because such shoots rarely ripen well enough to be useful. The object of stopping is to arrest growth gently and give the lower buds the chance not to start, but to swell and ripen into fruit buds. With shoots thus stopped at from 6 to 9 inches in length I have often had the lower half densely set with flower buds.

After such stopping of the shoots, the greater the vigour of the tree and the earlier the stopping is done, the more likely will some of the buds near the point of the shoot be to burst and grow. Let them do so; their growth will secure the buds farther back from starting. When these spray shoots are 3 or 4 inches long nip out the points again, and do it again if necessary. It is, as already stated, better to nip out the points than to cut; there is thus little stoppage given to root action. Never mind if the points of some of the first stopped shoots should have a head in autumn like a diminutive little shrub; all that will be removed in the early autumn and winter pruning, when you can cut back to a growing bud.

I satisfied myself years ago that wonders could be done with small trees in the way of fruitfulness by this early and continuous stopping of young shoots. Last year was not a good Apple year, but on a small bush tree from 3½ to 4 feet in height some people said there were nearly as many Apples as there were leaves, though the leaves were large and healthy. If the trees threaten to get higher than you desire you can easily encourage a shoot a foot or 18 inches farther down, and then remove a piece of the old head.

For profit and pleasure I feel quite sure these dwarf fruitful trees will supersede our old orchard trees. If I were commencing fruit-growing I should wish nothing better than a piece of ground of good quality, well trenched, and with dwarf pyramidal or bush trees in lines 15 feet apart, and 10 to 12 feet apart in the rows, and allowed to grow 6 to 7 feet in height, so as to be easily netted. I would not depend on early stopping alone, but would also depend on shallow planting on mounds, and keeping up necessary vigour and surface-rooting by annual rich surface-mulching. This is of more importance than mixing manure with the soil, which does so much to encourage free vigorous growth. Many would be surprised to know the quantity of manure our commercial fruit-tree growers give to their quarters of young fruit trees. They must have fine plants to command a sale. When early and free fruiting after planting is concerned, the manure should chiefly be applied at the surface. Of course, when a tree is required to fill a large space as soon as possible, the treatment must be different.—R. F.

A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 10. ODONTOGLOSSUM.

THIS has been quite a pet genus amongst Orchid-cultivators for some few years past; the ease with which the species may be grown, together with the little expense necessary to maintain a

temperature suitable for them, to say nothing of the remarkable beauty of their flowers, has deservedly rendered them so. The whole of these plants are natives of lofty mountain ranges, and cannot thrive under cultivation for any length of time in a high temperature. Another great recommendation which this genus possesses is the fact that so many of its species produce their flowers during winter, a season when flowers—and such flowers—are especially valuable.

As a rule, I have not found *Odontoglossums* thrive well upon blocks, the reason being, probably, that sufficient moisture for them was not maintained in the air when hanging from the roof. In pots, however, there need be no difficulty with their culture. Fill the pots three parts full of drainage, and fill up with good peat and sphagnum, through which should be scattered a few handfuls of silver sand. When potted in this material a very moist atmosphere must be maintained, and the plants require an abundant supply in the soil, but it must never be allowed to stagnate, or death will speedily follow. At the same time the cultivator must never attempt the drying system with them, or the result will be equally disastrous, although arising from exactly opposite causes. In the course of my acquaintance with *Odontoglossums* I have noticed that they are peculiarly subject to the attacks of a yellow fly; to rid myself of this pest I fumigated the house with tobacco, and was rewarded by the death of the depredators. Soon after these operations my plants would lose many of their leaves, and sometimes a young growth in the most inexplicable manner, when all at once it occurred to me it arose from the smoke; so taking a plant of *O. membranaceum* I subjected it to a fumigation in a hand-glass, and the leaves fell shortly afterwards, as before remarked. Having tried this experiment several times, I became fully persuaded that the tobacco had been the cause of my disaster, and consequently I discontinued the application. Since then I have washed off the fly with tepid water, and have never had a repetition of the leaf-falling phenomenon. This fact is patent to many now; but for the benefit of amateurs, especially those commencing the culture of these plants, I would say, Never fumigate *Odontoglossums*.

Beside the kinds here enumerated there are several grand species of recent introduction; but my readers must bear in mind that, in selecting certain kinds from the vast numbers now in cultivation, some good ones must necessarily be left out, and my object has been to introduce those which are both reasonable in price and beautiful when in flower.

O. ALEXANDRE.—Although it has been settled that this is the plant named by Lindley *O. crispum*, I cannot find it in my heart to relinquish the name which associates this chaste and beautiful flower with that estimable Princess whom all true Englishmen love to honour. This plant is now too well known to need much description from me; suffice it to say, if some few plants are grown in a collection, its exquisite flowers will charm the cultivator through the dulllest six months of the year, and occasionally a spike will be produced during summer. The scape is many-flowered, each bloom measuring some 3 inches in diameter, snow white in colour, more or less

spotted with cinnamon brown. They are admirably adapted for bouquet-making, and are charming adjuncts for the decoration of a lady's hair. If left on the plant and protected from wet, they last several weeks in full beauty. Native of New Grenada, at about 6000 feet altitude.

O. PISCATOREI.—A truly beautiful species, which no collection should lack. Like the preceding, it is dwarf and compact in habit of growth; it produces a long, branched, many-flowered scape from the base of the pseudo-bulb during winter, and continues in full beauty many weeks. As these plants bloom at various times, by having several of them the beauties of this fine species may be prolonged from autumn into early summer. The sepals and petals are pure white, in some varieties tinged with rosy purple; lip white, blotched more or less with violet purple, and stained with yellow at the base. Like the preceding, it is found in the high mountain regions of New Grenada.

O. ROSSII MAJUS.—Another beautiful dwarf species, producing its flowers at various times during the winter months; the scape usually bears three flowers, each measuring nearly 3 inches across. Sepals wholly pure white; petals pure white, beautifully marked with transverse bands of reddish purple; lip large, heart-shaped, and pure white; the column purple or yellow. Native of Mexico.

O. PULCHELLUM MAJUS.—This is also a winter-bloomer; the leaves are long, narrow, and, as well as the pseudo-bulbs, rich dark green; the flowers are pendulous, thick and waxy in substance; they are borne upon erect spikes, pure white, saving the base of the lip, where they are stained with deep red and yellow. In addition, they are deliciously sweet, and last long in full beauty. Native of Guatemala.

O. GRANDE.—A fine robust-growing plant, which will grow and bloom profusely if kept cool, but which dies rapidly if subjected to strong heat. The scape bears many flowers, each measuring from 5 to 7 inches in diameter; the sepals and petals are bright golden yellow transversely banded with chestnut brown, whilst the lip is white, occasionally marked with reddish purple. There are two

varieties or sets of this species, one which blooms during the autumn, and another in midwinter. Both are very desirable. Native of Guatemala.

O. NEVIUM MAJUS.—This most elegant plant is, unfortunately, still rare, and consequently ranges high in price. Its leaves are narrow, dark green, and some 8 or 10 inches high. The flower-spike is erect, bearing numerous flowers, which are in the sepals and petals much waved, pure white, spotted profusely with rich crimson, whilst the lip is yellow. This is a summer-blooming plant, usually coming in about the beginning of June. Native of Mexico.

O. TRIUMPHANS.—This species is rare, and by no means so well known by amateurs as it deserves to be. The pseudo-bulbs and leaves are bright dark green. The scape is many-flowered, each bloom some 3 inches in diameter; sepals and petals golden yellow, transversely barred and blotched with crimson; lip white towards the base, rich deep rose in front. It usually blooms during March and April. Native of New Grenada.



Odontoglossum Alexandre (Bot. Mag.).

O. LUTEO-PURPUREUM.—Of this fine species there are numerous varieties, some of them of extraordinary beauty. It is a somewhat stronger grower than many species of this genus; the pseudo-hulls are stout, and the leaves measure from 12 to 15 inches in length; scape longer than the leaves, many-flowered, individual blooms between 2 and 3 inches in diameter; sepals and petals bright brown or blackish brown, margined and blotched with yellow; lip white in front, blotched with brown at the base, and set off with long yellow crests. Native of New Grenada.—**EXPERTO CREDE.**

ROYAL HORTICULTURAL SOCIETY.

JUNE 4TH AND 5TH.

THE great summer Show of this Society, at least so far as London is immediately concerned, opened yesterday, and will be concluded to-day. It is held in the large tent at the south side of the gardens, where the flowers always show to greater advantage than they do in the arcades, and even the conservatory, welcome as its shelter has been this cheerless spring. But the first day was sultry, and even the lighter shelter of a tent, with the great influx of visitors which such an Exhibition drew, was oppressive, especially in the forenoon. Late in the afternoon there was a heavy downpour of rain. Taken as a whole, the Exhibition is a very good one; the tent is fairly furnished—it might have held more exhibits with ease, but one or two well-known names are not to be found; whatever may be the Society's difficulties, these, we cannot doubt, have no part in the matter. We subjoin details of the Show, which, we may add, is supplemented by Mr. Anthony Waterer's collection of Rhododendrons from Knapp Hill, now just arriving at their beauty.

STOVE AND GREENHOUSE PLANTS.—Of these, beautifully grown and flowered groups of nine come from Mr. Baines, gardener to H. Micholls, Esq., Southgate, and Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton. The former has his magnificent specimen of *Hedera tulipifera*; a splendid plant of *Ixora coccinea*, literally a mass of bloom; *Boronia pinnata*, in remarkably fine condition; *Phenocoma prolifera*; *Aphelaxis macrantha purpurea*, extremely fine; a grand bush of *Erica ventricosa coccinea* minor, *Dracophyllum gracile*, and *Azalea Mars*. Mr. Ward has *Statice profusa* very fine, and excellent specimens of *Aphelaxis macrantha purpurea*, *Hedera Hookeriana*, with *Heaths* and *Bougainvillea glabra*. Mr. J. Wheeler, gardener to J. Phillpott, Esq., Stamford Hill, sends a group in which we noticed a good example of *Clerodendron Balfourianum*. Mr. Baines is first, and Mr. Ward second.

In amateurs' groups of six Mr. Baines is again first, showing a very large and fine *Azalea Criterion*, not trained in the usual stiff style, but forming an extremely pleasing, somewhat irregular mass; *Aphelaxis macrantha rosea*, *Erica tricolor* Wilsoni, *Boronia pinnata*, and *Ixora coccinea* very fine. Mr. J. Wheeler is second, and Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., third, each having very good specimens. In the nurserymen's class for the same number of plants Messrs. Jackson and Son, of Kingston, are first with excellent examples of *Aphelaxis macrantha purpurea*, *Acrophyllym venosum*, and *Dracophyllum gracile*. Mr. Morse, Epsom, who is second, has a fine *Clerodendron Balfourianum*, a neat well-flowered example of *Stephanotis floribunda*, and other good specimens.

In Class 5, groups of plants are shown in pots not larger than 12 inches in diameter, and the whole of the specimens are very good. Mr. Ward takes the lead with two excellent *Heaths*, *Aphelaxis macrantha purpurea*, *Phenocoma prolifera* Barnesii, *Statice profusa*, *Dracophyllum gracile*, *Franciscea Lindenii*, *Stephanotis floribunda*, *Kalosanthes Frederick Desbois*, and others equally good. Messrs. Jackson & Son are second, and Mr. J. Wheeler is third.

ORCHIDS.—Of these no less than sixteen collections are exhibited, many of them being of great merit. In the amateurs' class for nine Mr. J. Ward is first with a splendid collection—*Phalenopsis grandiflora*, *Cypripedium Stonei*, *Cattleya Mossii* superba, and *Odontoglossum crispum* being very well grown. Mr. Rutland, gardener to the Duke of Richmond, is second; he has an exceedingly fine specimen of *Cattleya Mossii magnifica*, *Dendrobium densiflorum* with eight handsome racemes, and a handsome *Cypripedium caudatum*, with six spikes having two flowers on each. The third prize is awarded to Mr. W. Cutbush, gardener to Mrs. Adams, Chase Park, Enfield. In the corresponding class for nurserymen Mr. B. S. Williams is first with a handsome variety of *Lælia purpurata*, *Anguloa Clowesii*, *Saccolabium retusum* with four spikes, *Cattleya lobata*, and a fine specimen of *Cypripedium superbum*. Mr. W. Bull is second; he has *Eriopsis rutidobulbon*, a singular species with reddish-brown sepals and petals, the lip spotted, and *Lælia grandis*, the sepals and petals narrow and buff-coloured. A very nice group. Messrs. T. Jackson & Son, Kingston, Surrey, are third.

In Class 8, for six, Mr. J. Hill shows fine plants of *Phala-*

nopsis amabilis, which are spoiled by being placed in a dirty tub with rusty iron hoops, a fine *Dendrobium densiflorum*, and others. The first prize is awarded to him. Mr. J. Douglas, gardener to Francis Whitbourn, Esq., Loxford Hall, Ilford, is second with a fine group. It contains a splendid variety of *Masdevallia Harryana*, *Cattleya Warneri*, &c. Mr. J. Ward is third, and Mr. W. Cutbush fourth.

Class 9, for six (nurserymen), Mr. W. Bull is first with a nice group. *Cattleya Mendellii* in this is a fine thing. Mr. E. Morse, Epsom, is second. In this group the old but singular *Stanhopea tigrina* attracted much attention. The first prize for a single specimen goes to Mr. J. Wheeler, gardener to J. Phillpott, Esq., Stamford Hill, for a large specimen of *Dendrobium nobile*. Mr. W. Cole, gardener to J. S. Budgett, Esq., Ealing Park, W., for *Oncidium sphacelatum*, is second.

ROSES.—There is only one class for those in pots, and it is confined to nurserymen. The best six come from Mr. Turner, of Slough, who has *Juno*, *Victor Verdier*, *Vicomte Vigier*, *Madame Margottin*, *Charles Lawson*, and *Madame A. Dureau*, all fine specimens, and furnished with numerous large blooms. Messrs. Paul & Son, of Cheshunt, are second with, among others, beautifully-flowered specimens of *Lælia*, *Duke of Edinburgh*, and *John Hopper*. For forty-eight trusses Mr. Turner is first with *Maréchal Niel*, *Thérèse Levet*, *Edward Morren*, and fine examples of several others; and Messrs. Paul & Son are second; while for twenty-four trusses the same exhibitors occupy the same relative positions. Messrs. Mitchell & Sons, of Pildown Nurseries, send two stands of very fine blooms of *Maréchal Niel*.

FERNS.—Ferns, both exotic and hardy are numerous exhibited. The best six stove or greenhouse species are from Mr. Baines, and consist of noble specimens of *Dicksonia antarctica*, *Cibotium princeps*, *Gleichenia seluncæ*, *Gleichenia rupestris*, *Davallia bullata*, and *Cysthea dealbata*. Mr. Cole, gardener to J. S. Budgett, Esq., Ealing Park, who is second, has capital specimens of the Bird's-nest Fern, *Adiantum cuneatum*, and *Lomaria gibba*; and T. M. Shuttleworth, Esq., Harley Street, Cavendish Square, is third, showing among others a very fine specimen of *Adiantum farleyense*. In the nurserymen's class Mr. Bull is first, and Mr. Aldous, Gloucester Road, South Kensington, is second.

For twelve hardy Ferns, Mr. N. Camp, gardener to C. Walton, Esq., Manor House, East Acton, is first; Mr. James, gardener to W. F. Watson, Esq., Isleworth, second; and T. M. Shuttleworth, Esq., third. Many of these are very beautiful. R. A. Thompson, Esq., South Kensington Museum, exhibits twelve Devonshire varieties of *Polystichum angulare*. In the nurserymen's class Mr. Morse, of Epsom, is first; Messrs. Jackson, of Kingston, second. For six, Mr. G. Wheeler, and Mr. W. Whitaker, gardener to S. Williams, Esq., Putney, are the prizetakers.

PALMS AND DRACENAS.—For groups of six Palms, Mr. W. Cole, Ealing Park, is first with fine examples of *Livistona borbonica*, *Seaforthia elegans*, and *Areca rubra*. Second comes Mr. Hill, gardener to R. Hanbury, Esq., The Poles, Ware, and third Mr. G. Wheeler. In the nurserymen's class Mr. Wimsett, Ashburnham Park Nursery, Chelsea, and Mr. Burley, Bayswater, are the successful exhibitors. For two *Dracenas* Mr. Bull, of Chelsea, is first with a handsome pair of *Dracena lineata* fully 7 feet high. Messrs. G. Wheeler and Burley took the remaining prizes.

BASKETS OF PLANTS ARRANGED FOR EFFECT.—Several of these are exhibited. The fault consists chiefly in their being overelaborate. There is too much effort made in these matters to crowd in more plants than are required; there is too much ribboning, and also too little grace. Many a wild flower culled from the meadows and loosely arranged in the children's posies would be more effective than the more showy but often less elegant inmate of the hothouse. Mr. Hepper, gardener to C. O. Ledward, Esq., The Elms, Acton, is first with a good arrangement. Miss Williams, Upper Holloway, a good second; and Mr. Croucher, gardener to J. T. Peacock, Esq., Sudbury House, Hammersmith, third. Fourth, Mr. Cole.

SUCCULENTS.—A special prize was offered for fifty miscellaneous Succulents by J. T. Peacock, Esq., of Hammersmith, he himself refraining from exhibiting his collection, well known to be one of the most extensive in the country, if, indeed, it is equalled anywhere. Mr. C. Pfersdorff, 110, Avenue St. Ouen, Paris, has the first prize with a highly interesting group, containing *Opuntia cylindrica variegata* and many curious forms of *Agave*, *Cereus*, *Echeveria*, &c.; and Mr. Ware, of Tottenham, comes in second.

NEW PLANTS.—Mr. W. Bull, of Chelsea, offered prizes of £12, £8, and £5 in a class for amateurs, and the same amounts in a class confined to nurserymen, for twelve new plants introduced and sent out for the first time since the commencement of 1870. Among amateurs, T. M. Shuttleworth, Esq., took the first place with *Pandanus decorus*, *Macrozamia corallipes*, *Dracena splendens*, *Pandanus Veitchii*, *Guilielma utilis*, *Macrozamia spiralis*, *Primula japonica*, *Cucurlogia recurvata striata*, *Dracena Shepherdii*, *Maranta Seemannii*, *Maranta Makoyana*, and *Pandanus Lais*. Mr. Croucher is second with several of the above, *Dracena ornata*, *Macrozamia elegantissima*, *Dracena splendens*,

Stadmannia amabilis, and *Macrozamia spiralis eburnea*. Mr. Carmichael, gardener to H. Tegwell, Esq., Crown Hall, Bath, is third. In the nurserymen's class the prizes went to Mr. Wimssett, Messrs. E. G. Henderson & Son, and Messrs. Downie & Co., of Stanstead Park, Forest Hill.

For six new plants introduced by the exhibitor and not in commerce, Messrs. Veitch are first with *Dipladenia insignis* with splendid deep rose-crimson flowers, *Tillandsia Zahnii* (first-class certificate), *Adiantum speciosum*, *Aralia elegantissima* (first-class certificate), with dark green 9-10-lobed leaves, *Dracæna amabilis*, and *D. Baptistii* (first-class certificate). Mr. Bull is second with *Pritchardia grandis*, a very handsome Palm; *Cyathæa Burkei*, a remarkably fine tree Fern; *Croton majesticum*, very handsome; *Cycas imperialis*, a fine acquisition; *Dracæna Goldieana*, and *Encephalartos Jamesoni*. For three new plants, in or out of flower, introduced by the exhibitor in 1872-3, Messrs. Veitch bear the palm with a magnificent example of *Odontoglossum vexillarium* having twelve flowers much larger than it has before appeared with, *Aralia Veitchii*, and *Croton Weissmanni*.

MISCELLANEOUS.—An extra prize was awarded to Mr. B. S. Williams for a capital group of new and rare plants; those most striking are *Croton irregulare*, *Dæmonorops pericanthus*, and *D. fissus*. From Mr. W. Bull comes a very interesting and varied collection, among them being *Croton spirale*, and *C. cornigerum*. These, as well as some others, received first-class certificates. An extra prize was awarded. Messrs. Veitch and Sons have a large and highly meritorious collection. Here are *Croton Hookerii* and some others, *Dracænas*, Palms, Orchids, Ferns, and Acers of different coloured foliage. An extra prize was awarded. Messrs. E. G. Henderson, of St. John's Wood, send a group of Golden and Silver Tricolor *Geraniums*, *Coleus*, *Petunias*, *Anthuriums*, *Caladiums*, and cut flowers of *Mimulus*. Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park, has a well-diversified group of greenhouse plants and hardy Ferns. Mr. Charles Noble, of Bagshot, received an extra prize for a group of *Spiræa japonica* and *Clematises*. Messrs. Standish & Co., of Ascot, have a group of plants, the most conspicuous being a collection of Acers, and take an extra prize for plants of *Abutilon Boule de Neige*. Messrs. Cutbush, of Highgate, send a large basket of *Weigela hortensis nivea*—a suitable companion to the well-known *W. rosea*, and which will no doubt do as well for forcing. Mr. W. Bull has an extra prize for a good collection of Palms of the usual sorts.

Mr. W. Denning, gardener to Lord Londesborough, contributes a collection of Orchids, in which there is the very handsome *Odontoglossum vexillarium*, as well as *Masdevallia Lindenii* and others of interest. Mr. Aldous, florist, Gloucester Road, South Kensington, received an extra prize for a group of mixed greenhouse plants, consisting of Palms, *Crotons*, *Dracænas*, and Ferns. Mr. Pestridge, Greenway Nursery, Uxbridge, has twenty baskets of Tricolor *Geraniums*, dwarf in habit, good in colour, and offering a great variety of foliage. An extra prize was awarded.

Standard *Rhododendrons* of great beauty come from Messrs. Veitch & Sons, as well as boxes of cut blooms, also boxes of Ghent Azaleas and an interesting box of hardy flowering shrubs. An extra prize was awarded. Messrs. Osborn & Sons, Fulham, have a very fine plant in a tub of *Phormium tenax variegatum*, one of the finest plants of the kind. Mr. C. Turner, Slough, has baskets of Show *Pelargoniums*, and certificates were granted to several of them by the Floral Committee.

Among cut flowers, one of the most interesting things on the centre table of the tent is a large and beautiful collection of *Ixias*, *Tritonias*, *Scillas*, *Irises*, &c.; this box was quite besieged by admirers. Pansies in cut blooms were also sent by Mr. T. S. Ware, of Tottenham; a very dark one, named Pluto, which has been noticed in previous reports, is shown as a bedding variety.

FRUIT.

The exhibition of Fruit is varied and extensive; the show of Grapes for the season being good and varied in character, thanks to the wisely-compiled schedule, wherein they are divided into classes, so that Frontignans cannot be exhibited against Muscats, or Black Hamburg against Black Prince.

PINE APPLES.—Of these there is a poor show. In the class for three Queens Mr. J. Hepper, gardener to C. Ledward, Esq., The Elms, Acton, is the only exhibitor, and gains a second prize. In the Any variety class Mr. Rutland is first with Prickly Cayenne, Mr. Hepper being second with a Queen.

GRAPES.—Class 37.—Basket of not less than 12 lbs. Here there are seven exhibitors. Mr. T. Bannerman, gardener to Lord Bagot, Blithfield, Rugeley, is first with a splendid basket, the berries jet black and covered with a beautiful bloom. Mr. Bones, gardener to D. McIntosh, Esq., Havering Park, R. mford, is second; the third prize going to Mr. H. Stapleton, gardener to H. D. Davies, Esq., Spring Grove House, Isleworth. Class 38.—Single dishes of Black Hamburg.—Here the competition is also keen. Mr. Bannerman again takes the lead with a splendid dish, colour and bloom almost perfect. Mr. Douglas is second with a well-finished dish, but the bunches are not so

large. The third prize goes to Mr. J. Craven, at Mr. Davies Nursery, Friern Barnet, for a good dish. Class 41.—Any black variety except Hamburg, Gros Guillaume, and Madresfield Court.—Mr. Bannerman is first with a splendid dish. In the Frontignan class Mr. Bannerman is again first with Grizzly Frontignan; Mr. D. Pizzev, gardener to Sir E. Perry, Fulmer, Slough, being second with the white variety. In a class exclusively devoted to Buckland Sweetwater, Mr. Douglas is first with a well-finished dish, Mr. A. Reid, gardener to L. Huth, Esq., Possingworth, Hawkhurst, being second, the bunches and berries large. In Class 45, any White variety except Muscat of Alexandria, Frontignan, and Buckland Sweetwater, Mr. W. Hill, gardener to Rev. W. Sneyd, Keele Hall, Stafford, is first with well-ripened Foster's White Seedling, Mr. Pizzev taking a third prize with White Muscadine.

PEACHES.—Class 46.—There are five very nice dishes exhibited, though not quite so well finished as we have seen them at the summer exhibition of this Society. Mr. G. Sage, gardener to Earl Brownlow, Ashridge Park, Berkhamstead, is first with *Violette Hâtive*, Mr. W. Hill being second with Royal George, the third prize going to Mr. T. Bannerman for the same variety.

There is rather a poor exhibition of Nectarines. Mr. W. Gardiner, gardener to E. P. Shirley, Esq., Lower Ealington Park, Stratford-on-Avon, is first with *Violette Hâtive*; Mr. G. T. Miles, gardener to Lord Carington, Wycombe Abbey, High Wycombe, is second with pretty well-coloured Elruge; and Mr. W. Hill third, also with Elruge.

Two very good dishes of Figs are exhibited. Mr. G. Sage is first with Brown Turkey, Mr. G. T. Miles being second with Ischia.

Black and White Cherries are exhibited by Mr. G. T. Miles; he worthily holds the first prizes with Black Circassian and Eiton.

STRAWBERRIES of the British Queen and Dr. Hogg class. Mr. J. Douglas is first with excellent British Queen; Mr. W. Bones is second with British Queen; Mr. H. Stapleton third with Sir C. Napier. Class 53.—President, Premier, or any dark-coloured variety not Pine-flavoured. Mr. Douglas is again first with large well-coloured fruit of Premier; Mr. J. W. Chard, gardener to Sir F. Bathurst, Clarendon Park, Salisbury, is second with President.

MELONS, Green-fleshed.—Of these there are one or two good fruits, the others are inferior. Mr. G. T. Miles is first with a nice hybrid Cashmere; Mr. Bannerman second with Bellamore Hybrid. Mr. G. Ward is third with Wilson's Seedling. The Scarlet-fleshed are inferior. The only prize awarded is a second one to Mr. G. T. Miles for Royal Ascot.

PEAS.—Six dishes of Peas, to include Maclean's Blue Peter Carter's White Gem, and Carter's First Crop Blue; prizes offered by Messrs. Carter. Mr. G. Brown, gardener to E. Mackenzie, Esq., Fawley Court, Henley-on-Thames, is the only exhibitor, and takes the first prize with nice dishes of the varieties named, and William I., Prizetaker, and Supreme.

In the Miscellaneous class equal second prizes are awarded to Mr. A. Reid for Cape Gooseberries, and to Mr. W. Gardiner for a collection of well-kept Apples.

FRUIT COMMITTEE.—A. Smea, Esq., F.R.S., in the chair. From Mr. Bennett, gardener to the Marquis of Salisbury, came a box of Blue Gown Cucumber, which was said to be the true kind. He also sent a box of Dr. Hogg Strawberries; these were very fine, and a cultural commendation was awarded for them. Mr. Watts again sent his Northampton Hero Broccoli in good order. Mr. E. P. Francis, nurseryman, Hertford, sent a Broccoli, which did not merit any special notice. Mr. Hill, gardener to R. Hanbury, Esq., The Poles, Ware, sent the same sort. From the Royal Gardens, Frogmore, came a seedling Strawberry called La Grosse Sucrée, said to be a perpetual bearer, having fruit in three stages upon one plant, but its flavour was not considered so good as other sorts in cultivation. A commendation was awarded to Mr. Earley, Valentines, Ilford, for a well-kept collection of Apples.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. The certificates granted on this occasion were unusually numerous, including as they did many of the subjects forming part of the Show. Our remarks must be brief, and confined to little more than a bare enumeration of them. Mr. Bull had first-class certificates for *Cyathæa Dredgei*, *Campidium filicifolium*, *Dracæna rosea*, *D. Goldieana*, *Phyllotanium mirabile*, *Croton cornigerum*, *Cyathæa Burkei*, *Cycas imperialis*, *Odontoglossum Inseayii leopardinum*, very handsome; *Chamærops humilis variegata*, variegated with yellow; *Croton grande*, *Pritchardia grandis*, *Bertonia superbissima*, very beautiful; *Croton spirale*, one of the most remarkable of the genus, and *Cattleya Mendelii*.

Messrs. Veitch had first-class certificates for *Aralia elegantissima*, *Tillandsia Zahnii*, *Dieffenbachia brasiliensis*, extremely handsome; *Phycella pulchra*, scarlet, with the lower part of the tube green; *Lælia Wolstenholmie*; *Anthurium crystallinum*, a sterling novelty with broad silvery veins; and *Veronica diosmæfolia* with pale lilac flowers.

E. B. Foster, Esq., had a first-class certificate for Show Pelargoniums Protector, rose carmine, white throat, dark-veined top edged with rose; Blue Boy, lilac blotched with purple, dark top; Constance, soft rose, white throat; and Duchess, marbled rose, dark top, white throat. Similar awards were made to Mr. Drewry, Burton-on-Trent, for Red Gauntlet; to Mr. Turner, of Slough, for decorative Pelargonium Sunray and Triomphe de St. Maude, magenta rose, apparently a fine market kind; to Mr. G. Smith for Zonal Adeline Patti, large rose-scarlet, and Fair Rosamond, salmon; to Mr. R. Dean, Ealing, for shrubby Calceolaria Aurora, a very fine free-flowering yellow and brown-crimson kind; for Pansy Lothair, violet blue, fine; to Mr. W. Paul, Waltham Cross, for Pelargonium Miss Farrer; and to Mr. Cole, for Silene pendula compacta, very showy.

Messrs. E. G. Henderson had certificates for Begonia vivicans, Coleus Verschaffelti splendens, and a high commendation for their strain of Mimulus.

From Messrs. Backhouse, of York, came Odontoglossum Inseparabile already noticed, which received a first-class certificate; and a similar award was made to Messrs. Dixon, of Moorgate Street, for a double blue Lobelia, very free-flowering, and, we are informed, continuous-flowering as well. Mr. Pestridge, Uxbridge, had also a first-class certificate for Tricolor Pelargonium Marie Stuart, as did Mr. Perkins, of Leamington, for Verbena Edward Perkins, with fine trusses of white flowers having a rose eye.

BLACK PRINCE AND KING ALFRED PINE APPLES.

I FIND, on looking over the article of "J. M. C." at page 350, that he still believes Prince Albert Pine Apple to be distinct from Black Prince and King Alfred. He says the great peculiarity of Foden's Black Prince throwing up its long fruiting stem never occurs with the variety which has so long retained the unquestioned name of Prince Albert; also that he has a strong aversion, for obvious reasons, to the naked stem and invariable minimum produce of the pedestal type. He also says the finest fruits in every respect are produced by plants which at once show a vigorous formation. This I deny, for it must be admitted by all that the exception sometimes overcomes the rule. Again, he considers the purple-tinted leaves of King Alfred no reliable distinction. I still maintain that Black Prince and King Alfred are as distinct from each other as any two Pine Apple plants that are grown. Had Mr. Joseph Foden been of the same opinion as "J. M. C.," and had as strong an aversion to the naked stem and small formation of the fruit of the pedestal type, I can assure him that the Black Prince Pine Apple would not have been in existence to-day; for when the parent plant sent up its bold, erect, and almost naked stem with scarcely any formation of fruit perceptible for a time, it was then thought by many that it would be nothing but a blind show. Mr. Entwistle himself told my late father to take the plant out of the pit and throw it on the rubbish-heap. After a little patience the fruit began to expand in every way, and it became evident that it would make a noble fruit, for it soon gained the ascendancy over all the other plants. Mr. Entwistle was anxious that the fruit should be shown if possible; but as it did not ripen in time, it was cut in a green state and sent to the Manchester Exchange for exhibition. It weighed 10 lbs. 4 ozs., was eighteen and nineteen pips deep, and 24 inches in circumference.

I hope to have the pleasure of seeing the Prince Albert Pine Apple this season, and of observing if it is anything different from the Black Prince.—JAMES FODEN, Gardener, The Laund, Accrington, Lancashire.

[The correspondence on this subject may now cease.—Eds.]

RHODODENDRONS AT THE REGENT'S PARK.—As we have before intimated, Messrs. Lane & Son have this year taken the place of Messrs. Waterer at the Royal Botanic Society's Gardens. During the next week the plants will be in full bloom, and we hope then to report on them in detail.

NEW BOOK.

A General System of Botany, Descriptive and Analytical. By EMM. LE MAOUT and J. DECAISNE. Translated by MRS. HOOKER, and Edited by J. D. HOOKER, C.B. London: Longmans.

The title of this book is too long to be quoted at the head of this notice, but its scope and object will be learned from the observation we are about to make. This "General System of Botany" is a translation of the "Traité Générale de Botanique" of MM. Le Maout and Decaisne, by Mrs. Hooker, the

accomplished wife of the Director of Kew, edited and adapted to the system of botany taught in the schools, and practised by the botanists, of Great Britain and America.

The work consists of two parts, the first being outlines of organography, anatomy, and physiology; and the second, descriptions and illustrations of the orders. It is a large book, consisting of over a thousand quarto pages, but it is so copiously and so artistically illustrated as altogether to remove the charge of "heaviness" which is too frequently, and often unreasonably, made against the study of botanical works. With such a work as this before him, the student of botany must be dull who cannot comprehend the subject, for to any intelligent mind the instruction is so plain, and the illustrations so accurate, that we cannot suppose there would be any difficulty in acquiring a thorough knowledge of botany. Many of the woodcuts which illustrate the work will be recognised by those who are familiar with some of the botanical text-books already published, but this merely shows whence the authors of these works have derived their aid. We have here 3500 illustrations executed in the highest style of wood-engraving, and drawn by the most skilful French artists, representing almost every form of structure to be found in the vegetable kingdom. We believe there is no organ or arrangement of organs that is not shown in so clear a manner and on such a scale as to make it perfectly intelligible to the most ignorant beginner. We regret it is not in our power to furnish some examples of these illustrations.

To commend such a work as this is superfluous. The names of those concerned in it are the best guarantee of its excellence and utility. Le Maout and Decaisne as authors, Decaisne, Steinheil, and Riocreux as artists, are its original creators; and who shall say that in the hands of Dr. and Mrs. Hooker the English edition of this admirable work will be unworthy to rank with its French prototype? The name of Longman at once speaks as to the manner in which the work has been produced. We would most gladly have given an extract by way of illustrating the nature of the work, but without the illustrations it would have but little interest.

FLOWERS FOR OUR BORDERS.—No. 8.

PENTSTEMON SPECIOSUM.—SHOWY PENTSTEMON.

WERE we so unfortunate as to be compelled to limit our collection of plants to two genera, we think we should, without hesitation, select for one of these the Pentstemons, and for the other the Salvias.

The genus Pentstemon, although it scarcely includes so many species, and plants of such varied tints, as are comprised in the Sage family, can nevertheless boast of a considerable and increasing number, nearly all of which are plants of a highly ornamental character. The most prevalent colours of the genus are red or scarlet, and reddish purple; there are, however, a few species with blue flowers, of which the plant now figured may be regarded as the oldest, if not the best.

The P. speciosum grows about 2 feet high, and produces its beautiful deep blue flowers during two or three months of the summer; being generally in blossom by midsummer or soon after, and remaining in flower until the end of August or the beginning of September. It is far less common than it deserves to be, and this is perhaps owing to the fact that it is not strictly speaking a perennial, as is usually supposed, for it generally dies at the end of the second flowering season, and consequently requires to be kept up by seeds or cuttings. The seeds should be sown as soon as ripe, in pots or pans of sandy loam, and the young plants, which will soon make their appearance, must be preserved from frost during the succeeding winter in a cold frame. Where this convenience is not at hand, the seedlings must be kept in a window; when this is impracticable, it will be better to defer sowing the seeds until the following March, although, in all probability, but a moiety of them will then vegetate. When potted-off in the spring, the seedlings will require a rich soil, kept porous by sand or very sandy loam, and it will be advisable to protect them after potting by any available means from the chilling spring frosts.

At the season when bedding plants are turned out of their winter quarters, the Pentstemon speciosum may also be planted in the situation where it is designed to bloom the following year; though the plants will take no harm, but rather benefit from being kept in a cold frame until autumn, provided they are, as occasion requires, shifted into larger pots and duly supplied with air and water.

Where sufficient space can be spared, they will be found very suitable plants for a bed, or a clump of them may be planted together in the mixed flower border; and in either situation they will, when in bloom, form a highly pleasing contrast to the numerous flowers of scarlet hue with which the flower garden abounds in the summer season. Plants with blossoms of clear unambiguous blue are not so numerous as could be wished, for there is no colour, we think, on which the eye rests with greater satisfaction than on "Heaven's own tint."

We must not neglect to observe, that although the *P. speciosum* is a native of the bleak Oregon Territory, it requires, notwithstanding, to be guarded from excessive moisture during the winter season. This may be partially accomplished by covering the earth in the immediate neighbourhood of the roots with dry Fern, and also by planting the specimens in soil well drained and of an open sandy texture, supplying any deficiency of vegetable matter by a top-dressing of thoroughly rotten manure in the spring, to be afterwards dug in.

If the plant, after flowering the first season, be allowed to ripen its seed, it is generally so much exhausted by the operation, that it seldom blooms well the second year; but if cut down immediately after the first production of flowers is over, it "breaks" for the next season. It may be increased by cuttings or slips, but they are very sparingly afforded, the habit of the plant being in this respect singularly opposed to that of most of the species.



Pentstemon speciosum.

There are several other very showy blue *Pentstemons*, not to mention those of a purple tint, such as the now common *P. gentianoides*, which may frequently be met with 7 or 8 feet high.

Perhaps the best of these is the *P. ovatum*, a species which, in some respects, is superior to that just described; it has the largest foliage of any of the *Pentstemons*, and flowers of an interesting blue tint at the mouth and throat, though the outside of the tube is of a brownish purple.—(W. THOMPSON'S *English Flower Garden*.)

LARGE PEACH HOUSE AND VINERIES

AT MR. GODWIN'S, MAIDSTONE.

THE late Sir Robert Peel, in abolishing the duty on glass and removing the restrictions which fettered its manufacture, did more to encourage the higher branches of horticulture than any other man of the present century. In making this observation I by no means deny the credit due to the eminent writers and practitioners who have advanced so much the calling in a professional way; but we have only to look round us to see the multitude of glass structures that have risen up everywhere, and at the same time bear in mind how thinly such things were scattered over the land before the time of

that great statesman, and our gratitude to him ought to be more general. Although I do not attach too much importance to such things as require the aid of glass, there is no question that it has been of immense service in the production of many crops which our uncertain climate rendered precarious. Besides, the denizens of many of our towns, whose back yards afforded scarcely more room than was required to dust a carpet, and which could only with the utmost skill and economy be made to produce anything either useful or ornamental, can now make them wholly or in part conducive to the pleasure of the master of the house, his family, and visitors, and to afford the means of enlivening many an hour after the cares and anxieties of business.

Apart from the multitude of small plant structures that afford so much enjoyment to the amateur of small means, we have also to look to the eaters for the public market, and there we find what may not inaptly be called whole streets of glass structures, and their number is daily increasing. Of late we have heard of the magnificent Grape houses Mr. Thomson has erected in one of the border counties, while a similar establishment, over which Mr. Meredith presides, has existed for some years in the vicinity of Liverpool; and many others might be noted, including the extensive glass structures of our leading nurserymen. Many of these, as well as the other buildings of which glass forms so important a part, owe their origin to the impulse which cheap glass gave to such things, and we cannot take a railway journey, or even enter a station, without being reminded of what has been done with this material.

To the above notes of what has been effected by glass might be added much that does not always meet the eye at the great number of places of which the general gardening world has heard but little, and yet some of them are scarcely inferior to those which have obtained a wide repute. A visit to Maidstone a few days ago brought me to one of these places, and two or three years ago I believe I called attention to one of the glass houses that was being erected, and remarked on its unusual size. A second visit has enabled me to furnish some further particulars, which may be interesting to the amateur and professional gardener, and as the houses have been erected and are managed by one of the former class, the latter will probably be glad to hear the result.

In one of the suburbs of the town, three or four acres of waste land were purchased by Mr. Godwin. The ground had been a Kentish ragstone quarry, and although offering one of the prettiest prospects for building, the fact of its being quarried deterred builders from venturing upon it, and the debris of the quarry, together with what had been its surface soil, lay in the usual disorderly heaps. The situation, however, was a favourable one—a rather steep incline to the south—and the lower part of it was within a stone's throw of the river Medway. On this unpromising plot Mr. Godwin determined to try his hand at growing some choice fruits, and at the base of the hill erected certainly one of the largest glass houses I have ever seen. It is a sort of half-span, the longer rafter being 18 feet, and the shorter one 5 feet in length, with a front light 2 feet high, and a total length, undivided by any partition, of 385 feet. Is there any similar house that exceeds this in size? But this house is not the only one, for immediately behind it, with an open space of 60 feet between, there is another house of the same dimensions, except that it is 20 feet shorter, or 365 feet in length.

These structures were erected by Mr. Godwin from his own design. The width of each is 16 feet, and the back and front wall were constructed of the materials which the ground afforded. Some stone was still to be had, and some of the best of it was burnt into lime; with the aid of this and the other waste stone that was found in levelling and putting the ground in order, the back and front walls of these two glass houses were built, not in the ordinary way, for the stones, being so small, it was impossible to build them like ordinary masonry, but as a concrete wall, wider at bottom than at top. The wall being thickly whitewashed outside had a pleasing appearance, and, from what I saw of it, was likely to stand the weather well—in fact, Mr. Godwin said that the portion of it first built was getting as hard as in buildings that had stood the test of centuries. The front wall is built on arches of the same material, the wall plate embedded on the top, and the woodwork attached in the usual way. The front upright lights are all moveable as ventilators, so are many of the back lights, while a row of pillars inside at, I believe, 8 feet apart support the roof. The main roof is fixed; the sash-bars stouter than ordinary, and every fifth bar is a rafter,

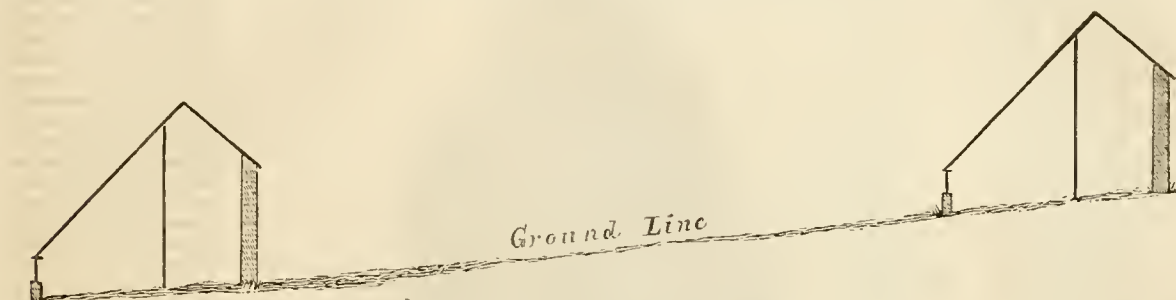
with bars of angle iron uniting the smaller bars with it. The glazing is of the usual order, and the squares upwards of 16 inches wide. The house is an exceedingly light one, and its appearance, as seen from a little way off, all that could be desired.

I will now endeavour to describe the contents of these houses, and shall begin with the shorter of the two, as it is that which the visitor first enters. It has been planted with Peaches only, and it would be impossible to find any more promising than they. The glazing of the house was only commenced on the 11th of March, 1871, and the trees (maidens) were all planted at that time or a few days before, and now many of them are upwards of 10 feet high, and 5 or 6 feet through, with every twig laden with blossom buds, which at the time of my visit (February 12th) were just ready to burst. The trees were planted in three rows, and were 12 feet apart in the rows. The front and back row trees were opposite each other, and the

removed, and the young Peach trees will speedily occupy the whole space.

The lesson to be learned from this ought not to be lost. Here are two houses of immense size, only 60 feet apart, both with borders made of the natural soil of the place with some admixture, the one planted with Peaches and the other with Grapes, and while the former luxuriates to a degree hardly to be expected in our latitude, forming excellent bearing wood from 1 to 2 feet in height, Vines are by no means satisfactory. A better proof that the two plants require a different soil cannot well be furnished, because the example is on so large a scale that accidental circumstances are not likely to have exercised any influence in the matter, all or nearly all the plants of both kinds in both houses being alike good or indifferent, yet both houses are treated alike, and both depend on sun heat alone for increasing their temperature.

Had the houses been built and their borders formed on the



The above section represents the two houses with the ground rising 8 feet between them. A row of pillars, 8 or 10 feet apart, support the front roof as shown.

middle ones were placed at an angle between. Some wires were fastened to the back wall to partly train the trees to; but little was done in that way, and wires were also strained underneath the glass on the front for the same purpose, but the trees there, too, were allowed much of their own way—in fact, Mr. Godwin said he had done very little to them excepting nipping off the tops of some very gross shoots during the growing season, and now and then cutting off one or two that were encroaching on their neighbours; yet such was the fruitful character of the trees, that I noticed in some places where the base of a shoot almost as thick as one's thumb had been left some 2 or 3 inches long, that a healthy fine-looking fruit-bud had been formed; and Mr. Godwin pointed out to me a Peach tree standing near the doorway that he said had been so far injured during the summer of 1871, by wheelbarrows and other traffic passing it, that in the March of 1872 it was only some 4 or 5 inches high, while it is now quite 10 feet high, and about half as much in diameter. The two or three first shoots made last summer, which were stopped, formed others equally strong, which, being also stopped, formed a number of blossom-bearing laterals, or rather sub-laterals. These were moderately short-jointed and well furnished with fruit-buds. There are several much larger trees, and unless their growth be checked by a crop I hardly know what will become of them. The trees were all maidens two years ago, and after being worked most of them have been untouched by the knife, or even the finger and thumb. The cause of their success appears to be, that the soil in which they are growing seems to answer all the requirements of the Peach and Nectarine, of which several varieties are grown, all in a state of healthy vigour and apparent fruitfulness. The house is not heated, and a crop of Potatoes planted all over the ground had tops several inches high.

We now come to the further and larger of these houses, that 385 feet long, and here perhaps as important a lesson may be learned as in the other case, but in a different way. This house was prepared in exactly the same manner, but was built two years previously. In the first season Cucumbers were grown in it, then Vines were planted along the front in the usual way, the front wall being on arches; but to show that the Vine and the Peach do not alike luxuriate on the same soil, the progress of the Vines had not been at all satisfactory, and Mr. Godwin had determined to turn the structure into a Peach house. Peach trees are planted in it much in the same way as in the first house; one being planted between the Vines along the front, at the same distance as in the other house—viz., 12 feet; but the Vines are left for one more year to see if their tendency to mildew can be overcome; if not, they will be

debris of a sandstone quarry instead of a limestone one, I expect the Vines would have been more promising, as I have generally remarked that the best Grapes are met with in districts where such a subsoil is met with, excepting in cases where great expense has been incurred in bringing soil from a distance, and, of course, in such cases the natural soil of the district plays a secondary part; but here it was left to do the whole, with only some unimportant additions in the way of manure.

Before leaving this spot I was shown by Mr. Godwin the commencement of another house behind those already described, and sufficiently far back to insure no injurious result arising from shading, and, as will be understood, the houses, standing as they do on the side of a hill, have a considerable advantage in this respect. A great part of the back wall was built, and men were wheeling soil into what would eventually be the inside of the house before the front wall was built, for it must be observed that any contrivance likely to lessen labour was taken advantage of. I should not wonder if in a short time another house, only a few feet shorter than the other two, were made. In the first house advantage has been taken of a spring of water that issues from the rock, to carry it in pipes, with tanks at every 20 or 30 feet, so as to afford a water supply; but the second house, being on higher ground, could not be fed from this source, and Mr. Godwin contemplates fixing an hydraulic ram at the bottom of his ground to supply the whole. A plot of ground at the bottom of all is planted with Strawberries, which have done remarkably well, and there are some young standard Pears and Damsons equally promising, the wood of the latter being of that fine deep black hue which denotes the best of health, and the bloom-buds are abundant all over the tree.

Besides the above houses, Mr. Godwin has erected one adjoining his own dwelling, which is on the opposite side of the town, and nearly a mile away. This house, which has recently been enlarged, is also much larger than houses of a like kind usually are, and as part of it was built some years ago, was heated with hot-water pipes, and planted with Vines, it had all the appearance of an established vinery. Originally it had been a sort of half-span, one of the lights (the short one) resting on the boundary wall, but as the owner obtained possession of the other side, the long rafter was made still longer, and a long one added on the other side, so that now it is a full span-roofed house, with front lights respectively 2 and 4 feet high, the length of rafter on the two sides being 26 and 29 feet. It will therefore be seen it is a large house, the length being 76 feet, and the height to the ridge 19 feet. Some 6000 feet of glass was required to glaze it, which was done much in the same way

as in the two former houses, which required, the one 10,000, and the other 9000 feet of glass.

I have already remarked that Grapes are grown in this house, or rather on one side of it; the other, which has been glazed since Christmas, is planted with maiden Peaches at 8 or 10 feet apart, and it is purposed to have Vines also if they do well, but at present there are on the ground floor four thousand Strawberry plants in pots, which will, doubtless, come on and yield a fair crop, as they are not much forced.—J. ROBSON.

MR. MITCHELL, OF PILTDOWN NURSERIES.

Those who have for a long series of years been accustomed to see the portly form and ruddy face of Mr. James Mitchell, of Piltown, at the metropolitan and other southern Rose shows, will regret to learn that he is no longer, having been struck down on the 10th ult., at, for one apparently so hale and healthy, the early age of sixty-five. He bore his years so well that one would have supposed him fully fifteen years younger. A characteristic portrait of him, forming a minor feature in connection with a representation of a fine specimen of *Araucaria imbricata* at his nursery, was published in this Journal little more than a year ago. Mr. Luckhurst remarked in a notice of this place:—"The many kinds of Coniferae cultivated at this nursery are remarkably healthy and vigorous, and a clear idea of their relative value can easily be obtained from the number there associated. The *Araucaria*, however, was the one which particularly attracted my attention. For some way along each side of a broad walk are rows of this tree, all of them symmetrical, but some notably so. I remarked a fine specimen about 30 feet high, which has its branches so regularly arranged as to render it conspicuous even among the others. Another large plant is a strange yet beautiful object, having long twisted arms closely set with spinous leaves, but presenting a naked appearance from the absence of any lateral growth. Many of the lower branches spring out fully 10 feet from the bole, twisting in a singular and not ungraceful manner, so as to stamp the tree as being almost a distinct variety. At the entrance of the avenue stands by far the finest specimen I have ever seen. It is a vigorous tree, 45 feet high, and beautifully clothed with

branches from the base upwards. What an attractive feature an avenue or a group of such fine trees would form."

FURNISHING A CONSERVATORY.

[A GENTLEMAN who had seen the wood engraving accompanying these notes, wished to know the approximate expense of such a structure, and how it should be furnished. We wrote to Mr. Edwin Lloyd, Horticultural Works, Grantham, and he obliged us by sending the woodblock, which will enable us to publish the engraving, and says, "It would cost about £700. The same description of construction applies to the above as to the conservatory now exhibiting by me at Vienna. The advantages of my constructions over others are their exceeding portability combined with great strength and lightness; they are bolted together, and can be taken apart like a bedstead, and are constructed so as to be a tenant's fixture. They can be taken down, removed, and refixed in a very short time and at a small cost, without injury to the structure. They are fixed together at my works before I send them away, the parts all numbered, and every facility afforded for fixing by the purchaser."]

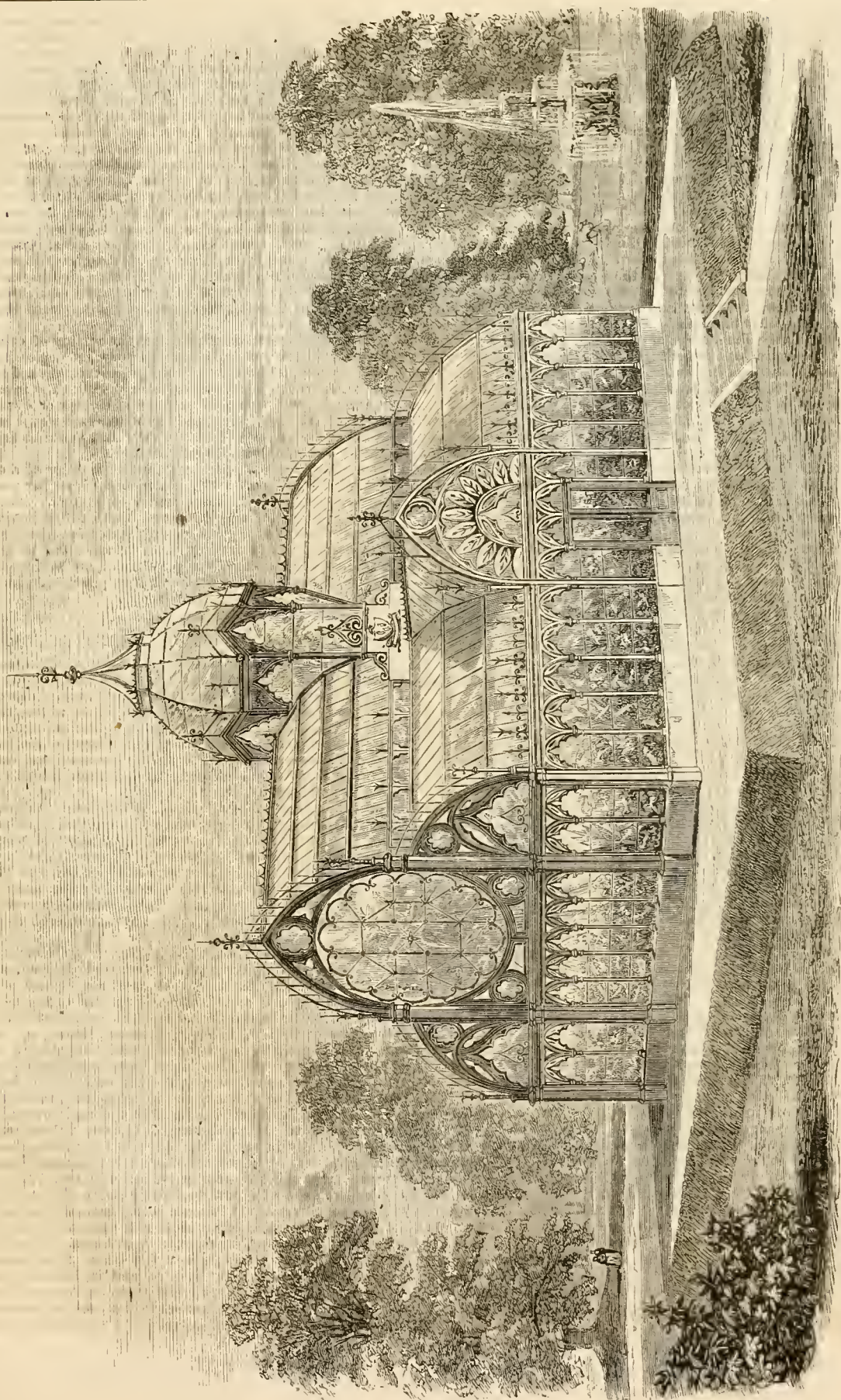
WERE I called upon to furnish such a conservatory as that in the accompanying engraving, 45 feet long by 23 feet wide, with glass on all sides and heated by hot water, and supposing the path or promenade to be in the centre of the house, leaving the space for plant-growing next to the glass, the following would be my choice of plants and ideas of arrangement

As will be seen, it is a handsome building as well as a lofty one, and disappointment would be likely to arise unless some proper preparation were made for the growth of plants to a considerable size. Although small plants are indispensable they would not have the decorative effect, and the building would

not be so well furnished without large plants also. As the glass starts from within 2 feet of the ground line, the house does not admit of stages being erected, neither should I advise them, because it would bring the pots into view from the outside; and shelves would be objectionable in such a handsome building, unless they were very narrow ones for small plants that hide the pots with their foliage. Instead of shelves and stages, I would prefer converting the space for plants into a continuous bed of soil round the house, the bed 3 or 4 feet in



Araucaria imbricata at Piltown.



depth. The front line might be broken at convenient places by a recess for the reception of a good specimen in a pot, or by projections in the curved form at other places, so as to break up the formal appearance of a straight line. In this bed on each side of the entrance, also at each corner of the house, as well as two or three intermediate spaces, I should plant specimens for permanent effect, and partition-off a place for each plant by 4½-inch brickwork (half a brick wide). This would prevent the intrusion of the roots of other plants into the border, and they could then have water applied according to their particular requirements.

The border proper I would give up entirely to a selection of climbers. In a lofty building a lot of healthy, free-growing, climbing plants rambling over the roof are a great ornament, but they will not thrive satisfactorily in cramped-up spaces: hence my reason for assigning them the remainder of the border. This done, the rest of the arrangement can be completed by the introduction of pot plants, placing the tallest at the back or near the glass, and the dwarfer ones in the front, facing them all to the path.

Assuming the dimensions of the building given above to be outside measure, and deducting 2 feet on each side and each end for thickness of brickwork, it leaves the interior 41 feet by 24 in the clear; and taking off a width of 7 feet all round for border, it gives a space 27 feet long by 10 feet wide for promenade. This, then, affords room for a small circular bed in the centre of the house for growing a handsome specimen tree Fern, Palm, or a standard Orange tree. Then, if the surface of the bed be covered with *Selaginella denticulata*, it will give it an attractive appearance. Whatever plant be placed in the centre, it should have a stem tall enough for visitors to walk under its branches, otherwise the space will be inconveniently taken up.

The next thing to be considered is a choice of plants to be grown, and I will begin with the climbers. *Tacsonia Van-Volkemi*, *Passiflora quadrangularis*, *Rhynchospermum jasminoides*, *Mandevilla suaveolens*, *Bignonia Chrere*, *Cobæa scandens variegata*, *Habrothamnus elegans*, *Kennedy Marryatta*, *Lapageria rosea*, *Heliotropium peruvianum*, *Jasminum odoratum*, and light and dark coarse-growing *Fuchsias*. The above have good growing qualities and bloom freely; they also include variety of colour of flower and foliage, and will all grow with greenhouse treatment, and are all evergreen.

Taking next the plants for permanent effect, I would place on each side of the doorway a nice plant of *Dracena australis* or *indivisa*; they are tall-growing handsome plants with gracefully drooping foliage. In other places I would plant white *Camellias*; *Fimbriata*, a fine white, and *Imbricata*, a deep rose, both of which are good standard sorts. Then there is *Jubilee*, delicate pink and a fine flower, plant strong-growing; *Bealii*, bright crimson; and *Marchioness of Exeter*, fine rose. Others might be added, but the above will not disappoint. There ought to be included a couple of plants of *Luculia gratissima*, than which there is no better plant for a conservatory. After these come standard or bush-grown Orange trees, which ought to be included in the building, as well as *Acacia grandis* and *Brugmansia sanguinea*, *Knightii*, and arborea, and *Aralia Sieboldi* or *japonica*, which latter is the proper specific name. I would not omit a couple of plants of *Pittosporum Tobira*, and a standard plant of scarlet *Rhododendron* and one of *Gibsoni*.

I might go on enumerating plants till one would be puzzled as to which to choose. All the above are well-tried plants for such a purpose, and would be sure to please. My aim would be to grow these plants into large specimens, but more for height than breadth, so that their branches would be clear of the dwarfer plants to be arranged under them, and give a more natural effect to the interior of the building. The above number would be quite as many as it would be advisable to plant-out, depending upon pot plants to complete the decoration, and of these a goodly number may be easily grown in the house all the year round, and at the same time add to the variety and distinctness of foliage to be distributed amongst other plants of a contrasting habit. These may include *Seafortia elegans*, *Areca sapida* and *rubra*, *Chamærops excelsa* and *humilis*, and *Latania borbonica*, all Palms of a more or less elegant appearance. After these I should rely upon several varieties of Ferns to improve the general appearance, such as *Blechnum corcovadense*, *Dicksonia antarctica* (small plants), *Lomaria gibba*, *Nephrodium molle*, *Nephrolepis exaltata*, *Woodwardia radicans*, *Pteris serrulata*, *serrulata cristata*, and *longifolia*, as well as *Adiantum formosum*, *cuneatum*, and *Capillus-Veneris*.

Considering the above to be the permanent occupants of the conservatory, the decoration will not be complete without a liberal addition of flowering plants from time to time. I think I may reasonably assume that whoever spent £700 in building such a conservatory as shown in the engraving would not be unwilling to build a plant house from which to draw plants for its decoration. One portion of this house should be for forcing plants into flower, and the other as a greenhouse; therefore in winter I should endeavour to have in bloom *Lilacs*, *Ribes*, *Dentzia gracilis*, *Roses* of sorts, *Spiræa japonica* and *Reevesii*, *Lily of the Valley*, *Azaleas* of sorts, *Hyacinths*, and *Tulips*, as well as several other things. In the spring and summer months will be coming in such plants as *Cinerarias*, *Primulas* (also in winter), *Cytisus racemosus*, *Corouilla glauca*, *Camellias*, *Azaleas*, *Fuchsias*, *Geraniums*, *Heaths*, and a variety of other useful decorative plants commonly met with in a plant house. These, added to what have been mentioned, will make up a very pretty and interesting display, and, if tastefully arranged, ought to please the most fastidious.

I have found from experience that the mixing of colours in conservatory arrangement is generally the most pleasing, and have, therefore, followed it up in the present instance. I should, however, consider there was little or no difficulty in varying my arrangements so as to produce a change of effect in a building of this description, and any colour that would be more pleasing in a mass, or a plant or plants that would be desirable to show off conspicuously, could be done.

I am an advocate for any design in the interior of a conservatory which does not crowd plants, but allows for plenty of root-growth as well as development of branch. Many disappointments have arisen through the builder having the allotment of spaces for plant-growing instead of the gardener; the consequence is that many times plants have to grow, or strive to grow, in cramped-up places, and are seldom for any length of time fit subjects to adorn the places to which they have been consigned.—THOMAS RECORD.

PRIMULA SIEBOLDI VAR. LILACINA.

THIS *Primula* is a native of Japan, and was introduced into Europe in 1862. Since then it has been shown at some of the spring exhibitions, as well as at the florists', where this charming plant is always admired for the freshness of its green, its graceful habit, and its large, open, soft lilac flowers. It resembles the Chinese *Primula* which everyone knows, and which is such an adornment to the conservatory and drawing-room, but is more graceful in habit and more delicate in the colour of its blossoms.

In his beautiful "Flora," M. H. Witte states that the type of this *Primrose* with rosy-purple flowers was introduced in 1862 by Von Siebold, of Leyden, from whom it passed to Messrs. Veitch. The first flowers of Messrs. Veitch's plants were submitted to Dr. Lindley, who assigned them to *Primula cortusoides*, distinguishing two varieties, *amœna* and *striata*; and at the present day, by most botanists, and among horticulturists generally, these *Primulas* are considered to be varieties of *P. cortusoides*.

Primula cortusoides was found in Siberia by Gmelin; it is a weak-growing little plant, pretty, but very delicate, and of small proportions. Linnaeus took it for a hybrid between *Primula integrifolia* and *Cortusa Matthioli*, regarding it as having the leaves of the former and the flowers of the latter. It was figured in 1797 in the "Botanical Magazine," with a rosy purple corolla having five acute, entire segments. It is a scarce and delicate plant, requiring to be wintered in a greenhouse or frame, and flowering in June or July. It loses its leaves at the end of autumn, and remains dormant till spring. N. J. Jacquin, in describing in 1798 the rare plants in the Imperial Garden at Schönbrunn, Vienna, noticed one interesting variety in which the flower-scape produced several whorls of flowers—precisely the character of *Primula japonica*—but the rosy violet flowers were insignificant. Lehmann, "Monographie des Primevères," published in 1817, mentions a white-flowered variety of *Primula cortusoides*, and according to Thunberg there is another kind not only to be found in Siberia, but in the wooded mountains of Japan. Duby, in 1844, extends the range of the plant to the Ural. In an article in the "Revue Horticole," by M. Greenland in 1859, it is stated that the flowers open in spring and again in autumn, that the plant is herbaceous, and flourishes in light soil in a somewhat shady situation. Dr. Lindley records it not only in Dahuria

and Japan, but also in Mantchouria, near the Amoor and Schilka rivers.

After a minute examination of the varieties introduced from Japan by Siebold, we have come to the conclusion that they constitute a distinct species which we name after the introducer *Primula Sieboldi*. The *Cortusa*-leaved *Primrose* has obtuse bi-crenated leaves—that is, the lobes are softly rounded, while in *P. Sieboldi* they are bidentate, with sharp toothings. The leaflets of the involucre are narrow and linear in *P. cortusoides*, whilst they are lanceolate and often dentate in *P. Sieboldi*. The divisions of the calyx are narrow, short, and adpressed, but are broad, lanceolate, and divergent in *P. Sieboldi*. The segments of the corolla, which are lanceolate and pointed in *P. cortusoides*, are generally obtuse and crenulated in *P. Sieboldi*, at least in the variety *lilacina*.

The distinctions between the two species have struck many. M. C. Lemaire ascribed the difference to hybridisation, and supposed that *P. sinensis* had something to do with it, and one might well believe that *P. Sieboldi* had some of the blood of *P. sinensis*; but there is no evidence that such a presumption ought to be admitted, for *P. Sieboldi* reproduces itself true from seeds. M. Herincq affirms that what are considered to be Japanese varieties of *P. cortusoides* belong to a distinct species. All horticulturists whom we have consulted are of the same opinion, and as proofs they adduce the difference of habit, culture, growth, and time of flowering.

There are several very distinct varieties of *Primula Sieboldi*. The first we shall notice is that named *amœna* by Lindley, because in the colour and general appearance of the flowers it reminds us of *Azalea amœna*. It has large, beautiful, rosy purple flowers. It was figured in the "Botanical Magazine" in 1865, in M. Witte's "Flora" in 1868, and in the "Florist and Pomologist" in 1870. It was exhibited at Paris in 1867 by Messrs. Veitch, where it made a great impression, and it is now cultivated by many florists. The second variety was named *striata* by Lindley, it has smaller flowers, lilac, striped with purple. The third variety, which ought to be called *grandiflora*, has flowers, white on the inside, purple on the outside. In *lilacina* they are large, delicate lilac, bordered with white, and scalloped at the edges. There is also a white-flowered variety. —(*Belgique Horticole*.)

WELLS.

WE read in a provincial paper that at Tissington, in Derbyshire, on the 22nd of last month, being Ascension-day, the old custom of dressing the village wells was duly observed. The wells are five in number, and for centuries it has been the custom on this day to decorate them with designs beautifully worked in flowers. Of recent years this pleasing custom has spread to Buxton, Matlock, and Wirksworth. This year several of the wells at Tissington were even more tastefully decorated than usual. The *Town Well*, especially, had colours brighter and warmer, and better blended than usual. The inscription over the arch was "God Has Gone Up." The superscriptions of all the wells appeared this year to have been chosen with special reference to the day. *Hands or Anns Well* took the second place in the opinion of most. Certainly it was very tastefully done, and the colours, although not so bright as those on the *Town Well*, were very good, and evidently a great deal of trouble and labour had been bestowed upon it. The design contained in the centre a large cross, entwined with a Vine with two bunches of Grapes, the inscription being "I am the True Vine." The whole was surmounted with a crown, beautifully worked with crimson and white flowers. The *Coffin Well*, *Goodwin's Well*, and the *Hall Well*, were all nicely decorated. The attendance of visitors was rather larger than in former years, owing, no doubt, to the fine day. As is the usual custom, service was held in the church, and a sermon preached. A procession was afterwards formed, and a psalm or hymn sung at each well.

In every district of the United British Islands are wells that at some season of the year were, and in many places still are, visited and decorated as were those at Tissington. It is no invention of Christian times, for in heathen Rome *fontinalia* was a religious feast, celebrated on the 13th of October, in honour of the nymphs of wells and fountains. The ceremony consisted in throwing nosegays into the fountains, and putting crowns of flowers upon the wells. Nor has the offering been confined to flowers, for we read of pins, rusty nails, and even rags being thrown into the well, or being about its surroundings. At Llandegla, in Wales, says Pennant, is a

small spring, the water of which was believed to cure certain ailments. If the afflicted be of the male sex, he makes an offering of a cock; if of the fair sex, a hen. The fowl is carried in a basket, first round the well, after that into the churchyard, when the same orisons and the same circumambulations are performed round the church. The votary then enters the church, gets under the communion table, lies down with the bible under his or her head, is covered with the carpet or cloth, and rests there till break of day, departing after offering 6d., and leaving the fowl in the church. If the bird dies, the cure is supposed to have been effected, and the disease transferred to the devoted victim.

The grave men of Oxford were not superior to such proceedings, for says Aubrey, writing about the year 1690, "the fellows of New College have, time out of mind, every Holy Thursday, betwixt the hours of eight and nine, gone to the hospitall called Bartlemews neer Oxford, when they retire into the chapell, and certaine prayers are read, and an antheme sung: from thence they goe to the upper end of the grove adjoining to the chapell (the way being beforehand strewed with flowers by the poor people of the hospitall), they place themselves round about the well there, where they warble forth melodiously a song of three, four, or five parts; which being performed, they refresh themselves with a morning's draught there, and retire to Oxford before sermon."

NOTES AND GLEANINGS.

MR. STEVENS sold 219 lots of Orchids for £476 on the 15th ult. *Aërides odoratum* was knocked down for £6, *Vanda snavis* for £7 10s., and *Calanthe Veitchii* for £5 15s.

— UNDER the name of "Herbarium Mycologium (Economicum)," F. Baron Thümen proposes to form a collection of those PARASITIC FUNGI which are injurious (including, also, any that are useful), in forestry, agriculture, horticulture, or in any other branch of industry. The specimens of each species will be labelled with the scientific name, diagnosis, and any needful remarks, and, where possible, will be sufficiently numerous for a portion to be submitted to microscopic examination. The collection will be issued in fasciculi of fifty species, at the price of three thalers each, and may be obtained of the collector, at Tepitz, in Bohemia.—(*Nature*.)

— BETWEEN the 2nd of April and the 21st of May sixty-six new Fellows have been added to the Royal Horticultural Society.

— M. VICTOR CHATEL continues his experiments on the action of PULVERISED COAL AS MANURE, and on the influence of various coloured glasses on vegetation. As to the latter, he finds—1, That under red, violet, and green glass, the surface of the ground remains completely moist, while it is dried under white glass, and also, but much less, under sky-blue, and clear orange yellow; 2, That the evaporation of dew is very rapid under violet glass, and that hoar frost remains long under sky-blue; 3, That under the sky-blue glass the growth of seeds and ships is very rapid.—(*English Mechanic*.)

NOTES ON THE GIPSY MOTH, AND LAWS FOR THE DESTRUCTION OF INSECTS.

INSECT life, as it is observable in our gardens, orchards, and shrubberies, has its ebbs and flows. Each species has its variations, since very few appear in successive years in the same paucity or abundance; and some species pass away entirely, and new ones become troublesome, which, if previously existent, had at least been unnoticed. The Gipsy (*Liparis dispar*), is one of those which was formerly, it is presumed, more common than it has been within the remembrance of the oldest students of entomology; and in France and Belgium it is plentiful—in the latter country often too plentiful. May it not be the fact that the caterpillar of this moth thrives best in a rather moist atmosphere, and the improved drainage of modern days and the diminution of marsh lands have perhaps conduced to its being brought to its present scarcity in Britain? Stragglers have occurred both in England and Scotland during the last year or two, but it does not seem likely ever to be again an annoyance to our cultivators of fruit. Indeed I have myself, to confess the truth, set at liberty some larvæ of the species, though in an open place where they could not do any injury to cultivated plants. Subsequent research in the same place failed to show that the Gipsies had settled there. I must acknowledge that I did once contemplate depositing eggs of this

moth on the fruit trees of a rather imperious "lord of the soil," who had threatened me for a presumed trespass; but I did not know how the law would view such an action!

I refer to this species, however, as an instance of how much might be done to keep down the number of the annual brood of caterpillars by a careful search after the eggs of the moth in the winter months. The legislative enactments for the destruction of insects in Belgium fail in this respect, that while providing for the killing of caterpillars, no measures are taken for the extinction of the germs of insect life—undoubtedly a most efficient plan. There are species of *Liparis*, such as *L. auriflua* and *salicis*, both well known in this country, which may be easily dealt with in winter by hunting-up the hibernating communities, similarly, also, the caterpillars of the Black-veined White Butterfly (*A. Cratægi*), of a like habit. Mr. Birchall notes that a regular annual destruction of these takes place in some parts of Belgium in November or February; but he noticed on a Cherry tree near Antwerp fifteen hatches of the eggs of *L. dispar*, in which lurked thousands of caterpillars, of whose existence no one took any cognisance. Doubtless a similar neglect is shown in other instances, and it is to be hoped, if we ever legislate on the subject, the extirpation of the eggs of insects will be made duly important. We in England have done somewhat in the way of protecting birds, a regulation for which is sorely needed in Belgium and other parts of Europe, where the slaughter of small birds is ruthlessly carried on, especially in the spring and early summer, when it is highly prejudicial in its results upon the birds and their nestlings.—J. R. S. C.

THE UNSUBDUABLE ANTS.

THE greater the number of specifics for a disease, the greater the probability that it is incurable. The continued questions that you receive about ants seem to show that the great desideratum is yet to be found. I have repeatedly tried arsenic mixed with sugar, and also with treacle, but my ants are too sagacious to touch it. This spring, seeing the avidity with which they devoured raisin skins, I mashed up some with arsenic. They examined the dainty, but respectfully declined it. The oil remedy, stated on good authority to be useful, has with me proved useless. Every morning for several months past a kettle of boiling water has killed numbers in an orchard house, but they still swarm there. Gunpowder has been put into their holes and ignited, but the entrance is so small that probably it is instantaneously closed, and no smoke descends into the nest. Bysaucers filled with syrup I drown many, but, like the Hydra, they multiply still; carbolic acid is disagreeable to them, but will not persuade them to flit.—G. S.

WORK FOR THE WEEK.

KITCHEN GARDEN.

CONTINUE to thin the crops that require it, while they are still small, and in every case where practicable loosen the soil about them, and if dry give them a good watering. This will greatly benefit them after disturbing their roots, and, the soil being loose, the effect will be so much greater. *Basil* and *Marjoram* that have been sown in beds should be thinned-out to about 6 inches from plant to plant. Make another sowing of *Broad Beans* in the beginning of the week; top the forward crop if not yet done. To have the Cape varieties of *Broccoli* fine, the seed should be sown where the plants are to remain; deep drills should be drawn, and two or three seeds dropped in at the distance of 2½ feet apart; slightly cover the seed, and keep it watered if dry weather should occur. When it is up thin to one plant at the distance above named. This is a good time to sow a little *Cabbage* seed for autumn produce; any of the small sorts should be preferred for this sowing. Plant out some *Cauliflowers* from the first sowing in the open ground; a small quantity planted from two or three several sowings will keep up a better succession than the small stunted plants of very early sowings. Peg-down the *Cucumber* plants on the ridges as they advance in growth, and when the hand-glasses will no longer contain them, set these on three bricks placed edgewise, or on forked sticks; when they require water give it them milkwarm early in the day. After thinning the *Onions* loosen the soil between the rows, and if the weather is dry give them a thorough watering. The thinnings of the beds may be planted out, but must be watered every night if the weather prove dry, until they take fresh root-hold; this must be particularly attended to, as the roots will of necessity be very near the surface. The last sowing of Knight's Dwarf Green Marrow *Peas* should now be made, as it is longer in coming into bearing than any other. Continue to earth-up and stick the advancing crops. If the pods of the early crop do not fill well in conse-

quence of drought, give them one good root-soaking, which will be sufficient for them while they last. Make another sowing of *Radishes* of the various sorts to succeed those sown the middle of last month. Plant out some of the early-sown *Savoy*s; the dwarf sorts may be planted at 1½ foot apart in the row, the rows to be 2 feet from each other. The larger sorts should be at the latter distance in the row, and the rows 2½ feet apart. As *Tomatoes* are usually planted under a south wall, where they receive little benefit from a passing shower, they should be occasionally watered and kept mulched with short litter; nail and stop the shoots as they advance in growth.

FRUIT GARDEN.

Continue to pay attention to fruit trees; nail-in the strong shoots of those against walls. If Cherry trees are attacked by insects, dip the ends of the shoots in tobacco water. Vines on walls require much attention to bring the fruit to perfection; indeed, if proper attention is not paid to them in stopping, regulating, and nailing-in the shoots, they are not worth retaining. Pinch out the points of Fig-tree shoots that are rather rampant; this will cause the young fruit to swell better, and will have a tendency to render the shoots more fruitful. In making a fresh plantation secure a dry situation, and keep the plant growing from one stem, as the sucker-like appearance which our Fig trees generally present is a great drawback to their management.

FLOWER GARDEN.

Remove everything in the way of early bedding plants whose beauty may be over or that is at all ineffective, and introduce good things from pots in the reserve ground. A good reserve ground, if properly situated and systematically planned and conducted, would be one of the most useful plots about a garden. Such a valuable adjunct as this would, however, require the constant attention of a man possessing some knowledge of flowers, and therefore could not be carried out where there is a scarcity of labourers. Decayed patches of bulbs which are required to stand for early spring flowering may have *Verbenas* and other plants introduced from pots between them, so as to give gaiety to the place they occupy. Cuttings of *Pansies* should be put out in succession before the shoots are too much exhausted. All boundary or other hedges should be clipped forthwith. *Auricula* seedlings must be shaded from the glare of the mid-day sun, and especially watch the attacks of aphid or green fly, which usually secretes itself in the heart of the plant, and multiplies amazingly in hot weather. If you wish to save yourself a great deal of trouble you will remove the insects as they appear. Place two or three oyster shells on the surface of the soil in the large pots; it prevents evaporation, and also saves the roots from being washed bare in watering them. *Polyanthuses* are very subject to the attacks of red spider; to keep these pests down, shade your plants, and if in a bed keep the soil moist around them. Break off the capsules of *Tulips* to strengthen the roots. The bulbs on the offset beds will soon be ready to take up should the weather be dry. The stakes ought to be put down to *Dahlias* without delay, and the plants will be the better of being mulched with rotten manure.

GREENHOUSE AND CONSERVATORY.

As soon as *Azaleas* and other plants of the kind shall have been placed in summer quarters out of doors, painting and other repairs required by any of the plant houses should be commenced, as they can be more conveniently done then than at any other season. As recommended, pay great attention to plants for autumn and early winter decoration. Let them have plenty of pot room, good rich compost to grow in, a moist atmosphere, and plenty of space for perfect development, regulating the temperature according to the nature of the plant, and they will make rapid growth. Many of the New Holland plants and other greenhouse subjects will soon be getting past their best, and some foresight and care will be necessary to avoid being short of specimens in bloom with which to supply their places. Where circumstances will admit, plants that have been grown in a warm moist atmosphere should be removed to an intermediate house about a fortnight previous to their being taken to the conservatory, and gradually inured to a free circulation of air. By attention to this and placing the plants in the warmest corners of the conservatory, *Clerodendrons*, *Allamandas*, *Achimenes*, &c., will continue growing slowly and bloom for some three months, whereas if this is neglected their beauty may be very short-lived. Aim at maintaining an even temperature in the conservatory after removing thence plants that have grown in the stove, and avoid allowing the atmosphere to become very dry on bright warm days. Also see that every plant is perfectly clean before placing it in this house, and that climbers, &c., are not infested with insects. Go over the house every morning, and remove decaying flowers and leaves as they make their appearance. Young stock in pits and frames will now be making rapid growth, and must be carefully attended to as to watering, stopping, training, &c. New conservatories where a collection of climbers has been planted this spring should now be kept as hot as a stove, and as damp as water can make them day and night. It is bad policy to use the common routine for such a house the first season. We often hear of

large conservatories becoming too hot and injuring the plants in summer, but it is the want of moisture in the atmosphere and not the heat which causes the mischief.

STOVE.

One of the chief ornaments of the stove we consider to be climbing plants. Where the shrubby plants are large, the climbers, hanging in loose disorder, give the house a sort of tropical character which is highly interesting. Although they may hang in loose disorder, they require pruning and regulating so as to prevent their becoming one entangled mass of wood and foliage, and it is only by constant attention that this can be prevented. See that young growing stock is not allowed to suffer for want of pot-room. Attend carefully to watering, giving manure water to all plants in free growth that require it. Gardenias and other plants that have been in the conservatory while in bloom should be replaced in heat as soon as their beauty is over, in order to allow time for getting their growth ripened before short days and dull weather have arrived. Orchids in a growing state will require encouragement. Shading must be promptly attended to in bright weather. Allow, however, as much light as they will bear without injury, using a very light screen, and that only when absolutely necessary.—W. KEANE.

DOINGS OF THE LAST WEEK.

The weather continues fine, but crops make little progress as the ground is dry, and though, during sunshine, it is comparatively warm, yet the wind is cold, and it is very chilly at night. A warm shower would refresh and invigorate all growing crops. On examining the fruit crops in the open air in the kitchen garden, there seems to be a good set on all small fruits. Gooseberries, Currants, Raspberries, and Strawberries are abundant. Apples and Pears seem to have set well; Cherries and Plums, considering the abundant crop of blossom, are only moderately good. The frost on the 20th did no damage to any out-doors fruit, excepting Strawberries; where the flowers were expanded a large number of them are now quite black, but they can be spared, as the plants are literally sheets of bloom.

KITCHEN GARDEN.

Early Potatoes on a sheltered border escaped the frost and are nearly ready, indeed many would use them in the stage the seeds are. I have heard of an amateur who has had a dish from the open ground, but the quality was very indifferent. The sort I prefer now is Myatt's Prolific Ashleaf, kindly sent by "D., Deal." It is rather earlier than the old Ashleaf, and a much better cropper. Veitch's Perfection, round, is not quite so forward, but will come in for succession.

Last year we had the first dish of Peas from the open ground the first week in June. The slats are now just formed, and are a miserable crop, owing to the wet state of the ground when the seeds were sown. The *Early Horn Carrots* are ready at the exhibitions early in June. Our Carrots generally hold the first place, not that they are better grown than those from others, only earlier. We had 28 feet of Rivers's ground vinery, and under these Carrots, Lettuces, and Radishes are sown about the first week of February. Refuse soil from the potting-shed sifted, or any fine dry loam is laid on the surface to the depth of 3 or 4 inches; the Carrots and Lettuce are sown in rows 9 or 10 inches apart, and Radishes between the rows. These are pulled before they do any harm to the other crops. These ground vineries can be made cheaply, and are invaluable for forwarding crops of vegetables, placing over rows of Strawberries to hasten their ripening, &c.

We have been hoeing and earthing-up Broad Beans and Scarlet Runners, as well as placing sticks to the latter. The Strawberry beds are clear of weeds, but we had the Dutch hoe run amongst the rows to kill any incipient weeds and to loosen the ground; they will not require any more hoeing. All the Cabbage tribe are doing well this year. The plants of the second sowing of Cauliflowers are dwarf and healthy. Frequent hoeing amongst such crops is very beneficial.

FRUIT AND FORCING HOUSES.

The *Pine Apples* are now growing freely. The houses where fruit was ripening required to be shaded by the end of May in previous years, as yet we have not had a day of scorching sunshine. The ripening fruit is apt to be injured by the sun if it is too powerful. Owing to the season we have not much used the evaporating-troughs, as a moisture-laden atmosphere causes the crowns to grow out of all proportion to the fruit, especially with such sorts as Charlotte Rothschild. In the succession-house the plants are acquiring a dwarf healthy growth.

Vineries.—Much the same as last week. Grapes in the Muscat house are thinned, and in the late house mostly planted with Lady Downe's and Black Hamburg, they are now being thinned. Golden Champion is doing badly with us this year. It was planted in three different houses, ripening at different seasons. In the latest house it was destroyed last year. In the earliest house it promised well early in the season, the berries set well, and the bunches were large. Now, what with shanking and

spotting, there is not a single bunch presentable; it must also go next year. In the second early house it has always done pretty well, but it is not so good as it has been in previous years. I wish I had never seen any of the new Grapes. I often think of the remark made by a very old gardener when I told him that we had planted over twenty sorts of Grapes. "I'll tell you what I think, Douglas; you had better have planted Muscat of Alexandria and Black Hamburg only." Young gardeners, make a note of this. It is not the extra guineas required to purchase the highly-lauded novelties; it is the valuable space taken up, the expectant waiting, and the final disappointment.

Melons in the second house are now set and swelling nicely; they are remarkably healthy, and show no signs of disease. Stopping and training the shoots. They are not grown in frames, but in houses trained to a trellis overhead. The Cucumbers are grown in a similar house. The Tomatoes grown on the back wall of those houses are now in; the fruit is remarkably fine. The Orangefield is the best sort we have grown for forcing; the plants are dwarf, and bear a good crop of large even-sized fruit.

ORCHARD HOUSE.

The fruit trees in pots have only required the usual attention as regards watering, thinning some of the fruit where it had been left too thick, and pinching the vigorous-growing shoots as opportunity offers.

CONSERVATORY AND PLANT STOVE.

We have been necessitated to leave other pressing work to wash with water, in which soft soap has been dissolved, bug-infested plants. At this season mealy bug spreads with singular rapidity, and if not destroyed in time will become quite a nuisance. There is a probability, if the plants can be thoroughly cleansed at this time, of getting rid of it altogether; but it requires extreme vigilance to look out for its appearance afterwards and wash it off immediately. All fine-foliaged plants are in full growth, and require attention. Many of the *Alocasias* become infested with red spider, likewise some of the *Crotons*; these must be kept quite clean by syringing, as, if red spider is allowed to increase, the beauty of the plants will be sadly marred. Palms requiring repotting should be done at once; good turfy loam, with a little fibrous peat (if not sufficiently porous add a little sand, seems to suit them well, but by all means avoid overpotting. A plant that has well filled a 5-inch pot with roots may be shifted into a 7-inch pot, or sufficient space may be allowed between the ball and side of the pot to permit of not more than an inch of soil all round, which ought to be pressed in quite firmly; thorough drainage is also essential. Orchids are grown in the same house with flowering and fine-foliaged plants. Those in flower must not be spattered with water when the syringe is being used, as it will cause the flowers to become spotted, which sadly mars their beauty.

Chrysanthemums have required attention as regards training the shoots; this must be done before they become hard, otherwise it is very difficult to bend them without snapping them off at the joints. This year as well as last the autumn-struck cuttings nearly all run to flower. The plants go on all right until April, when the points of all the young growing shoots become furnished with flower buds, and as fast as they are pinched off fresh buds are formed, so much so that the plants have to be destroyed. Spring-struck cuttings seem to succeed well. All the plants have been infested with aphids. They were fumigated frequently when under glass, but could not have been quite clean when placed out of doors. Dusting the points of the shoots with dry Scotch snuff kills the aphides, so will dipping them in water wherein soft soap has been dissolved, and 2 ozs. of tobacco to each gallon of water. We have appropriated a small house entirely for Rose culture. The plants had become too crowded, and as a consequence the shoots were drawn. Half of the plants were placed out of doors in a sheltered place, and will, from being grown under glass for some time, flower earlier than those growing out of doors.

We put in cuttings of stage *Pelargoniums*, one cutting in the centre of a small 60-pot, the compost used being about equal parts loam and leaf mould. The pots were placed in a cold frame and plunged in cocoa-nut fibre refuse; the cuttings would have done as well on a shelf near the glass in a cool greenhouse. We have been training and thinning-out the growing shoots of climbers, re-arranging plants, removing those which have flowered out of doors, and replacing with young specimens which will come into flower at once.

FLOWER GARDEN.

The lawn requires frequent mowing, as Daisies continue to bloom, and the flowers, if not cut off, spoil the appearance of the lawn. A full crop of weeds has appeared on the flower beds, and as the surface of the ground was a little caked, the Dutch hoe run lightly between the rows will destroy the weeds, and by loosening the soil be of great benefit to the plants. We do not like to water so early in the season, but if it do not rain soon the *Calceolarias* and *Verbenas* must be watered, as they show signs of distress in sunshine. Put in cuttings of *Phlox suffruticosa*.

cosa, and a few of *P. pyramidalis*. We are very late with them. March is a better month; the cuttings should be taken when the shoots are about an inch or two above the ground. They were treated exactly as the *Pelargoniums*, and placed in the same frame.—J. DOUGLAS.

TO CORRESPONDENTS.

*. We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

OX-EYE DAISY IN MEADOWS (*A Subscriber*).—This weed is peculiar to some soils, and a small field near us used to be quite white with it about the end of May, until the owner determined one season to feed it off closely with sheep. Giving these some artificial food, the ground was much benefited, and the *Chrysanthemum* (for this plant is one) almost disappeared. We presume the sheep eat it down so closely that it dies. Hand-weeding is too tedious for a meadow field, although in a pleasure ground it is indispensable. We may further remark that a piece of rich cow pasture near us, that used to be quite yellow with *Buttercups* in the month of May, is now almost without them. The proprietor encouraged rabbits to a great extent, and they rooted up most of the *Crowfoot*, and the field is now without them. As the *Ox-eye Daisy* is much less tenacious of life, hard feeding by sheep will most likely destroy it. Stones on a meadow are usually gathered off in spring before it is finally rolled, which must be done before the grass attains any considerable length.

MELONS AND CUCUMBERS DISEASED (*H. W.*).—It is not easy without seeing the plants to say what is the cause of the discoloration of the leaves and the other tokens of ill health of which you speak. Sudden changes from cold winds to bright hot sun, and inattention in air-giving, and shutting up the frame or pit, are apt to affect the foliage. Frequently the whole of the under surface of the leaf becomes covered with a sort of eruption. A much worse disease has often attacked Cucumbers of late, covering the leaf with black blotches; this threatens to become a sort of murrain. We imagine, however, that the disease has been caused by the plants having been subjected to great extremes of heat and perhaps cold, or rather by a large admission of cold air when the plants were unduly heated; the leaves present the appearance that they often do when such has been the case. If very severely affected destroy the plants and start fresh ones. Melons rarely do well when once injured. Careful and steady treatment of young plants is more likely to be successful than nursing injured old ones.

EARTHING-UP POTATOES (*J. P.*).—Opinions differ on this practice, and we believe the conflicting results arise from the difference of soil and climate. In light soils earthing-up is beneficial in some respects. Leave two or three rows unearthed, and let us know if their produce is less or more, earlier or later, than that of the neighbouring rows.

ROSE CUTTINGS IN A COLD FRAME (*J. B. F.*).—The best time to take the cuttings to be struck in a cold frame is July, directly the flowers are shed, as the wood is then ripe. The cuttings should be taken from the shoot below the flower; remove the upper part with three or four joints, cut across below the lowest joint and remove the leaf there; then insert them 1 inch or 1½ inch deep in a small pot, filled with a compost of two parts light fibrous loam, one part sandy peat, and one part sand. Place them in a cold frame and keep them close and shaded from sun, but sprinkle with water every morning. They will be rooted in about six weeks, and should then have air, and be thinned to light. Shift them into larger pots in September, and winter them with the pots plunged in a cold frame.

DOUBLE WALLFLOWERS (*Gardenia*).—It will be of little use removing them to the kitchen garden in the hope of their being again available for planting-out to give a good display each spring. They might produce side shoots from which you could take cuttings; but we should advise seed to be sown forthwith, and if you have a good stock of seed we do not see why you should not have a good percentage of double-flowered plants.

DOUBLE DAISIES FOR SECOND YEAR (*Idem*).—They should be removed after flowering, be divided, and planted in a rather shady border. If removed with balls they may be used for next year's flowering. *Nemophila* and *Candy-tuft* sown in autumn may be transplanted in spring, taking care to have a ball of soil to each plant. They are, however, best sown where they are to flower.

ERROR.—In "Ornamental Planting," page 433, column two, line thirty-seven from bottom, for "Weeping Birch," read "Weeping Beech."

PICEA NORDMANNIANA UNHEALTHY (*A. C.*).—The *Picea Nordmanniana* 10 feet high, that has been in its present position two years, with no better result than having the growth of last year all dead, and the very feeble shoots of the present season thickly infested with aphides, is probably past recovery. If, however, you are disposed to try to save it, examine first of all the condition of the roots. If these prove alive and plump you may hope to succeed, but if the majority of them are dead, then all efforts to reclaim the tree will be vain. Should the condition of the roots be favourable, open a trench around their extremities a foot wide, and quite to the bottom of the original ball, fill this with rich soil that is light and porous rather than of a close adhesive nature; water the ball thoroughly, forcing a few holes into it with a pointed stick, rather than fail to reach the whole of the roots; cover the surface with a thick mulching of litter; clear the branches of all decayed wood, and syringe the foliage frequently—two or three times daily will not be too often. Secure the tree firmly with wires stretched from the stem to pegs

driven in the ground equidistant from each other in the form of a triangle. The saturated condition of the soil during the past winter of excessive wet has probably killed the roots, which would cause the growth of last season to perish as it has done. We have lately examined a *Thujaopsis borealis* that was killed outright in this way. If you replace the unhealthy tree with another, plant it on a slight mound that is raised a foot or two above the general level, in sound sweet soil that is well drained. Secure it immediately with wire and pegs, mulching the surface with litter, or, if the position is conspicuous, using moss. Apply water freely and frequently, taking care that it penetrates the ball and constantly reaches the whole of the roots, and there will be little risk of future failure.

SALT ON ASPARAGUS BEDS—LIQUID MANURE TO CABBAGES (*J. N.*).—Strewing salt on Asparagus beds 1 inch thick in patches would act prejudicially on the roots, especially if near the surface. Liquid manure is highly beneficial to Cabbages, and should be poured between the rows. The soil will be rendered firm to a certain extent by the watering, but this need not hinder the application of the liquid manure, it being better than allowing the ground to remain loose and not apply the liquid.

CYCLAMENS AFTER FLOWERING (*J. C. R.*).—Those which have not flowered, as well as those which have, should be allowed a season of rest, but at no time should Cyclamens be permitted to become dry at the roots. They are best planted out in a cold frame, taking up and repotting in August when beginning to grow afresh.

BIGNONIA PANDORE (AUSTRALIS) NOT THRIVING (*Temorr Cottage*).—Plant it out in a border in the greenhouse or conservatory, and train the shoots 9 inches or a foot from the glass. It will then grow freely, and will probably flower next year. The *Wistaria* does best on a south-west aspect, but would probably succeed with you on an east or west aspect. We should, however, give it south if you can. It likes good, rich, rather light loamy soil, with one-third of leaf-soil and one-fourth of peat. It would not succeed well on a wall with ivy; the wood would not be sufficiently well ripened for flowering.

VINES UNHEALTHY (*R.*).—As the borders have been very wet, and the Vines have been heavily cropped in previous years, there is sufficient to account for their sickly appearance. Take a moderate crop from them this year, do not give air too freely in the day during dull cold weather, and shut up the house about four o'clock in the afternoon. If your district is wet you should have some wooden shutters for your Vine borders to throw off the rain. Our lot is east where the rainfall sometimes does not exceed 20 inches in twelve months, so that shutters are only necessary for the early houses.

VENTILATING VINERY—TEMPERATURE (*O. P.*).—You have done well to have the house provided with top as well as front ventilation. Our advice is to use the back or top ventilation only so long as the temperature does not rise too high, and then the front as well as the top to keep the temperature from rising too high, always commencing with the top ventilation first, then extending it if need be to the front, and reducing the ventilation in reverse order, commencing to reduce in front first, and at the top last. The extreme temperature we should allow would be 90° from sun heat; but you ought to give air at 75°, and a little before that point is reached, and it ought not to exceed 80° before you admit more air, having full air on if it keep at that without lowering the temperature, which it ought to do in all instances. The art in giving air is to do so with a rising temperature, and to reduce the amount by the time the heat of the house begins to fall, closing at 75°.

TOPAEA SUPERBA CULTURE (*A Seven-years Subscriber*).—It should be grown in a pot well drained, using a compost of three parts fibrous peat, one part yellow loam, and a half part each of sandstone or crocks broken rather small, and silver sand. The peat and loam should be tamped moderately small, and the whole should be well mixed; pot moderately firmly. Keep the soil constantly moist, and place the plants in a moist shady part of the greenhouse. If the house be small it will do without a glass, but if not sufficiently close and moist it should be covered with a glass just resting within the rim of the pot, and if it have no holes in the top it should be taken off and wiped dry once daily. The plant should be gently sprinkled with water once a-day through a very fine-rosed watering-pot. If the glass have no holes at top tilt it a little on one side at night, shutting close in the day. The plants having the requisite moisture, the fronds will be covered with minute dewdrop-like spots of water in the morning from the condensation of water during the night.

FERNS SHRIVELLED (*W. M. G.*).—The fronds of Ferns sent us have the appearance of being "scalded," probably from exposure to the direct rays of the sun. They are also blackened, which shows that they have been heavily syringed; the water constantly hanging from the ends of the fronds and the sun shining on them whilst wet, cause their destruction. Another likely cause, though the above are the most probable, is that they have been fumigated strongly with tobacco, the house being filled too full, which has made the atmosphere so dry as to cause the fronds to shrivel. Keep the atmosphere moist by sprinkling evaporating surfaces in the house twice or three a-day, syringe the plants only at night, and shade from bright sun from 8 A.M. to 5 P.M. with tiffany or other light material, commencing with April and continuing in bright weather up to September inclusive. If the plants are screened from powerful sun by climbers or Vines over them, the shading will not be necessary.

GRAPES SPOTTED (*Tyneville*).—They are severely spotted. See what we said in answer to another correspondent in our last number, page 411.

LABURNUM WITH PURPLISH AND YELLOW FLOWERS (*T. Hackwell*).—It frequently occurs. Some years since Mr. Fish observed:—"The changes produced on the Laburnum when grafted are sometimes wonderful and wholly unaccountable. We have rarely seen the common or Scotch Laburnum sport into other varieties. We recollect of only one instance in which flowers of purpureasens appeared. But if you graft either of the Laburnums with *Cytisus purpureus* or *Cytisus spinosus*, the vagaries which sometimes take place are astonishing. I can see any day a small standard of *Cytisus alpinus* which was grafted with *Cytisus purpureus*, and on the same branch will sometimes be found small pieces of yellow and purple, and at the very point strong shoots of the *Cytisus alpinus*, the 'blood' of the stock finding its way through the more weakly growth of the scion. What is remarkable is, that grafting or budding with one variety will frequently, as the plant grows, present you with three or four varieties, or what are called 'species'."

CONSERVATORY GAY FROM NOVEMBER TO APRIL (*F. P. G.*).—To have the house gay at the time you name, the plants you have will be very suitable, and with good culture during the summer will produce a very effective display. In addition to the plants you have, of *Primulas* we should sow at once another packet of seed, and of *Roses* we would add at least another dozen to your present stock. Of *Epacris* add also a dozen. The *Geraniums* cut down now, and their growth encouraged during the summer, stopping up

to the end of July, and keeping from flowering up to the beginning of September, will afford a fine display in autumn. We presume they are Zonals. The Intermediate Stocks will no doubt serve you well, and the Mignonette; but we should have potted them off singly and shifted into larger pots as required, picking off all flowers as they appear up to September. The Chrysanthemums will also come in time. The first addition we should suggest are Chrysanthemums; they will make a fine show—in fact, be the beginning of your display, say two dozen Large-flowered, one dozen Pompon, and a dozen Japanese. In September add bulbs, as Hyacinths, Narcissus, Tulips, &c., to your liking, and have *Deutzia gracilis*, Lily of the Valley, *Dielytra spectabilis*, and *Spirea japonica*. The *Dielytra* you have will answer well for forcing. The Lilies you must procure and have set with flower buds, potting them in autumn. The early-flowering *Rhododendrons* and varieties of *Azalea pontica* are very fine for conservatory decoration, also *Kalmia latifolia*. They should be procured in autumn set with bloom buds.

WHAT WILL RABBITS NOT EAT?—*Doratheia* wishes for a list of plants that rabbits will not eat.

DRUMSTICK ASPARAGUS (*Idem*).—To obtain Asparagus white all but quite the point, nothing more is needed, so soon as the point of a shoot appears above the surface, than to cut it as low beneath the surface as a knife can be thrust. Such white-stalked useless shoots we never tolerate. We let the shoots grow until 3 or 4 inches above the surface are quite green. Those inches are all eatable and high-flavoured. The white-stalked shoots, which we call drumsticks, have only their tips eatable, and they are insipid.

INSECTS ON VINES AND PEACH TREES (*R. B.*).—The insects eating the Vine stems and Peach leaves are small beetles called weevils, to be caught at night by spreading a white cloth beneath each tree and shaking it. The specimens you have sent are *Curculio oblongus*, or *Oblong Weevil*.

INSECTS ON PLUM AND APPLE TREES (—).—The dark chestnut-coloured objects like halves of large peas on the twigs of these trees are the females of a species of scale insect (*Coccus*), beneath each of which is a mass of eggs. If not cleared off at once you will have to cut down and burn your trees very soon.—I. O. W.

NAMES OF PLANTS (*D. H.*).—We cannot tell the names of Roses, they are legion. Yours will grow from cuttings the same as any other. The other plant is the common *Cytisus*, *Cytisus sessilifolius*. It is propagated by seed, which it yields plentifully.

POULTRY, BEE, AND PIGEON CHRONICLE.

REFORM IN POULTRY PACKAGES.

I FULLY endorse what your correspondent says as to the desirability of some improved fastening for baskets conveying specimens to and from the various exhibitions. It is quite apparent that some more secure and expert system than the present needle-and-thread sewing should be adopted. For my own part I cannot conceive anything more simple and secure than a short strap and buckle, which would cause a great saving of time in penning and repacking the birds, and thus accelerate the return of specimens. Many of the packages in which specimens are sent for the selling classes are literally wretched; and I take this opportunity of calling attention to it, as it has been with difficulty we could patch some of them up so as to be sufficiently secure to send the birds away from our Ipswich Shows; and this, I think, is imposing too much on committees, who, with the best regulations, find an immense amount of hard work attending these exhibitions. We make it a rule to dispatch for their homeward journey all specimens the same night as the Show closes; and it is hoped the improvements will be apparent at the next Ipswich Show, which is advertised to take place October 15th and 16th, when the single-bird system, so strongly advocated in a recent Journal, will be again adopted.—W. B. JEFFRIES, *Ipswich*.

BLACK COCHINS.

I HAVE two strains of Black Cochins, one imported from China, the other obtained from a cross of Whites and Buff; the former are of excellent colour, and never had a vestige of white or coloured feathers, these are always long in legs. I therefore keep the other strain for my own breeding and crossing with the imported birds, and hence obtain shape. The pullets obtained in this case are generally good black, but the cocks are often stained on the hackle; I have never had a black bird turn the colour of his feathers after moult as "E. S." observes.

Another observation I would like to make is that all my imported birds have black legs, whereas the cross-bred as above mentioned have yellow legs; we may therefore safely say that Black Cochins must be an original breed and not obtained. Mr. Hole observes justly that the chickens are light when first hatched from imported birds, but turn jet black and remain so, I never saw one jet black when first out of the shell.—A. A. VANDER MEERSCH, *Merton Road, Tooting*.

BATH AND WEST OF ENGLAND SOCIETY'S POULTRY SHOW.

This is held at Plymouth, beginning on the 2nd, and to continue until the 6th. Our notes on it will be published next week.

SPANISH.—Cock—1, 2, and Cup, E. Jones, Clifton, Bristol. 3, E. Jackson, Finchfield, Wolverhampton. *hc*, E. Jackson; R. S. Samways, Southampton. *Hens*.—1 and 2, E. Jones. 3, W. Woodhouse, Lynn. *hc*, T. Barnfield, Clifton (2); Miss E. Browne, Chard; W. Woodhouse; E. Jones. *c*, E. Jackson.

DORINGS.—Coloured.—Cock.—1, Rev. J. G. A. Baker, Old Warden, Biggleswade. 2, Withheld. 3, J. Martin, Claines, Worcester. *Hens*.—1 and Cup, J. Martin. 2, Henry Lingwood, Barking, Needham Market. 3, E. Burton, Truro. *hc*, Mrs. Wolcombe, Lewdown.

DORINGS.—White or Blue.—Cock.—1 and *hc*, O. E. Cresswell, Early Wood, Bagshot. 2, J. H. Nicholls, Lostwithiel. *Hens*.—1, O. E. Cresswell. 2, J. H. Nicholls. *hc*, A. Darby.

COCHINS.—Cinnamon and Buff.—Cock.—1 and Cap, Henry Lingwood. 2, Mrs. Alcock, Worcester. *hc*, H. Yardley, Birmingham; J. C. Cooper, Limerick; C. Taylor, Gloucester; T. F. Asdell, St. Helen's; S. R. Harris, St. Day. *c*, J. K. Fowler, Aylesbury; Miss J. Milward, Newton St. Loe. *Hens*.—1, T. F. Asdell. 2, H. Yardley. *hc*, Mrs. H. J. Bailey, Rosedale, Tenbury; H. Tomlinson, Birmingham.

COCHINS.—Brown and Partridge-feathered.—Cock.—1, A. C. Travers, Felmouth. 2, J. H. Nicholls. *Hens*.—1, A. C. Travers. 2, H. Yardley. *hc*, J. K. Fowler.

COCHINS.—White.—Cock.—1, S. W. Probert, Lostwithiel. 2, H. Tomlinson, Birmingham. *hc*, S. W. Probert; O. E. Cresswell, Early Wood, Bagshot; R. W. Beachey, Flad, Kingskerwell; R. S. S. Woodgate, Pembury, Tunbridge Wells. *Hens*.—1 and *hc*, R. W. Beachey. 2, R. S. S. Woodgate. *c*, J. H. Nicholls.

BRAHMAS.—Dark.—Cock.—1 and Cap, T. F. Asdell. 2, Horace Lingwood, Creeting, Needham Market. *hc*, E. Ennor, Bristol. *Hens*.—1, T. F. Asdell. 2, Horace Lingwood. *hc*, S. Allen, jun., Plymouth.

BRAHMAS.—Light.—Cock.—1, J. H. Nicholls. 2, Rev. J. G. Ridley, Newbury. *hc*, J. Pares, Postford, Guildford; T. A. Dean, Maiden, Hereford; N. Heath, Totnes. *Hens*.—1, Horace Lingwood. 2, J. Pares, Postford, Guildford.

GAME.—Black-breasted Red.—Cock.—1, J. Mason, St. John's. 2, Rev. G. S. Cruwys, Craws Morchard, Tiverton. *hc*, Dr. W. K. Bullmore, Falmouth; E. W. Williams, Herringtons, Dorchester. *Hens*.—1, E. C. Pope, Falmouth. 2, W. H. Staggs, Netherbury. *hc*, J. T. Browne, St. Austell; J. Jeken, Elham. *Hens*.—1, J. T. Browne; S. Matthew, Stowmarket. *hc*.—1, J. Jeken. 2, S. Matthew. *hc*, J. Westcott, Barnstaple.

GAME.—Duckwing and other Greys and Blues.—Cock.—1 and Cup, J. T. Browne. 2, Dr. W. K. Bullmore. *hc*, S. Matthew. *c*, Rev. G. S. Cruwys; J. Masoa. *Hens*.—1, J. T. Browne. 2, S. Matthew. *Any other variety*.—Cock.—1, Rev. G. S. Cruwys. 2, No competition.

HAMBOURG.—Golden-spangled.—Cock.—1, I. Davies, Harborne, Birmingham. 2, N. Barter, Plymouth. *hc*, W. A. Hyde, Horst, Ashton-under-Lyne; Mrs. J. Pattison, Dorchester. *Hens*.—1, W. Driver, Keighley. 2, I. Davies. *hc*, S. R. Harris, Casgarne, St. Day; W. A. Hyde; Mrs. J. Pattison.

HAMBOURG.—Silver-spangled.—Cock.—1, Mrs. J. Pattison. 2, Ashton and Booth, Broadbottom, Mottram. *Hens*.—1, Miss E. Browne, Chard. 2, N. Barter, Plymouth. *hc*, Mrs. J. Pattison.

HAMBOURG.—Golden-pencilled.—Cock.—1 and Cap, T. Edmunds, jun., Totnes. 2, N. Barter. *hc*, G. Lise, Par Station. *Hens*.—1, G. Packham. 2, Mrs. Trove, Bampton.

HAMBOURG.—Silver-pencilled.—Cock.—1, N. Barter. 2, H. Feast, Swansen. *Hens*.—1, N. Barter. 2, H. Feast.

POLISH.—Cock.—1, T. P. Edwards, Lyndhurst. 2 and *hc*, G. C. Adkins, Birmingham. 3, S. W. Probert, Lostwithiel. *Hens*.—1, T. P. Edwards. 2, A. Darby, Bridgnorth, Salop. 3, J. Hinton, Warminster. *c*, S. W. Probert; G. C. Adkins.

HOCKANS.—Cock.—1, H. Feast, Swansen. 2, G. Slade, Crewkerne. *hc*, F. Brewster, Lostwithiel. *Hens*.—1, F. Brewster. 2, W. Driag, Faversham. *c*, Mrs. Wolcombe, Lewdown.

CREVE COCHINS.—Cock.—1, H. Feast. 2, J. C. Cooper, Limerick. *hc*, J. K. Fowler; Mrs. H. J. Bailey, Tenbury; W. Humphreys, Liskeard. *c*, Mrs. E. Barnett, Bodmin. *Hens*.—1, J. J. Maldoe, Biggleswade, Beds. 2, J. K. Fowler. *hc*, J. C. Cooper; H. Feast. *c*, Mrs. E. Barnett.

NEWCASTLE.—Barnyard Variety.—Cock.—1, H. Feast (Black Hamburgh). 2, J. H. Nicholls, Lostwithiel. 3, S. W. Probert (Parrigan). *hc*, S. R. Harris, Casgarne (Malay); Rev. G. S. Cruwys, Tiverton (White Minorca); J. Blamey, jun., Penryn; J. H. Pring; J. Hinton (Malay). *c*, J. K. Fowler; Rev. N. J. Ridley, Newbury (La Fleche). *Hens*.—1, Miss S. Northcote, Lymington (White Minorca). 2, H. Leworthy, Newport, Barnstaple (Black Minorca). 3, Rev. N. J. Ridley (Malay). *hc*, J. K. Fowler (La Fleche); J. Blamey, jun. (Malay).

NEWCASTLE.—White Aylesbury.—1 and Cap, S. R. Harris, Casgarne. 2 and 3, J. K. Fowler.

DUCKS (Rouen).—1, J. N. C. Pope, Bristol. 2, J. T. Browne, St. Austell. 3, J. K. Fowler.

DUCKS (Any other variety).—1, H. Yardley, Birmingham (Whistling Ducks). 2, J. J. Malden (Buenos Ayres). 3, Miss E. Browne, Chard (Carolinians). *hc*, Mrs. H. J. Bailey, Tenbury (White Cattle); G. S. Sainsbury (Buenos Ayres).

TURKEYS.—Cock.—1 and 2, Rev. N. J. Ridley. 3, J. Oliver, Linton.

GESE.—1, J. H. Nicholls, Lostwithiel. 2 and 3, J. K. Fowler, Aylesbury.

BANTAMS.—Gold and Silver Splits.—1, C. Petherick, St. Austell. 2, Rev. G. S. Cruwys, Tiverton. *Black or White*.—1, B. F. Parrott, Newbury. 2, E. Cambridge, Cotham, Bristol. *hc*, S. W. Probert; Rev. G. S. Cruwys; R. H. Ashton, Mottram. B. F. Parrott. *Game*.—1, N. Barter, Plymouth. 2, W. Currah. *hc*, J. Martin, Claines. *c*, S. W. Probert.

BANTAMS.—Any colour or variety.—Cock.—1, Master F. S. Robinson, Suderland. 2, R. Wilkinson, Guildford. *hc*, S. W. Probert; A. M. Pigott, Exeter; E. C. Phillips.

PIGEONS.

CARRIERS.—Cock.—1 and *hc*, W. B. Ford, Weymouth. 2, J. Broad, Plymouth. *c*, H. Yardley, Birmingham. *Hens*.—1, H. Yardley. 2 and *c*, W. B. Ford.

POUTERS.—Cock.—1, W. B. Ford. 2, Miss J. Milward, Newton St. Loe. *hc*, H. Yardley; W. B. Ford. *c*, J. Roberts, Plymouth. *Hens*.—1, H. Yardley. 2, G. Parkham, Exeter. *hc*, W. B. Ford (2).

RUNTS.—1 and 2, H. Yardley. *hc*, J. Wheeler & Sons, Shipston-on-Stour.

FANTAILS.—1, F. Brand, Bideford. 2, J. L. Smith, Barnstaple. *hc*, O. E. Cresswell, Bagshot, Surrey.

TRUMPETERS.—1, F. Brand. 2, Bullen & Joce, Barnstaple. *hc*, J. Broad. *c*, H. G. Evers, Plymouth; H. Yardley; G. Parkham.

BARBS.—1 and 2, Bullen & Joce. *hc*, Bullen & Joce; H. Yardley (2).

ARCHANGELS.—1, H. Yardley. 2, O. E. Cresswell. *c*, Bullen & Joce.

TURBANS.—1, O. E. Cresswell. 2, J. Croote, Heavitree, Exeter. *hc*, J. Croote; J. Blamey, jun., Penryn; H. Yardley. *c*, Balloo & Joce.

TUMBLERS.—Almond.—1, H. Yardley. *Any other variety*.—1, H. Yardley.

NUNS.—Prizes withheld. Triumphant.

OWLS.—1, F. Brand. 2, J. L. Smith. *hc*, H. Lewis, Plymouth.

JACOBINS.—1, H. Yardley. 2, F. Brand.

ANY OTHER VARIETY.—1, Balloo & Joce. 2, H. Yardley.

JUDGES.—Poultry: Mr. E. Hewitt, Birmingham. Pigeons: Mr. W. B. Tegetmeier, London.

MR. W. J. PETTITT'S APIARY.

"WHERE there's a will there's a way," is illustrated by Mr. W. J. Pettitt, of Snargate Street, Dover, who, at a great amount of trouble and expense, has, by the aid of flights of stone steps, half scaled the cliff at the back of his residence and constructed there an apiary which has few equals. The bee colony having been formed, the difficulty in the way of bee-keeping was not

great. True, honey-yielding flowers are not indigenous to the region of chimney-pots, but innumerable flowers of numerous species find a lodgment on the jutting edges of the white cliffs about Dover; and certainly, were it not for the visit of Mr. Pettitt's army of workers, they would have to "blush unseen and waste their sweetness."

Even the instinct of the bee can be improved by education, and very apt pupils the little insects seem to be under Mr. Pettitt's teaching. The improvement on the natural method is to induce the bees to build their comb in frames. The idea of placing straight bars across the top of the hive to help the bees in commencing their work is a very old one, but it proved to be of little advantage. The addition of three other sides, making a complete frame, was the first approach to real improvement. This frame not only compels the bees to construct their comb entirely straight, but it also gives facilities for examining the comb while the work is in progress. The other day we saw a practical illustration of the value of these frames when on a visit to Mr. Pettitt's apiary. We had expressed a wish to see the queen that presided over a certain hive, and Mr. Pettitt, with his usual courtesy, undertook to introduce us to her majesty. The hive being a bar-frame one, he took out frame after frame, notwithstanding that they were filled with comb and covered with bees, and ultimately the queen was discovered with a number of her subjects clustered round her. These bar-frame hives are made in great numbers at Mr. Pettitt's establishment, with certain improvements which his long experience has suggested. One valuable improvement in the Pettitt bar-frame hive is that the top bars of the frames project quite through the back and front of the hive. This projection greatly facilitates the lifting or removal of the frames, which rest in a pair of patent metallic bar-holders, invented by Mr. Pettitt some ten years since, and are now extensively used in all parts of the kingdom. Mr. Pettitt's observatory hive is very interesting. It revolves on a turntable, has glass sides, and is so arranged that all parts of the comb can be examined when the bees are in full work without taking out the frames.

A great feature of Mr. Pettitt's apiary now is the general introduction of the Ligurian bees, found between the two chains to the right and left of Lombardy and the Rhaetian Alps. They are more prolific, less sensitive to cold, and more docile than the common English bee. Throughout the country the Ligurians are rapidly replacing the common black bees. During the summer months Mr. Pettitt receives importations of Ligurian queens. These beautiful queens being successfully introduced into an English stock in lieu of its native queen, the whole colony become pure Ligurians in a few months.—(*Dover News*.)

GAINSBOROUGH POULTRY SHOW.—This is in connection with the Lincolnshire Agricultural Society. The prizes are good, and the town of Gainsborough gives some £5 prizes in addition. The entries close on the 21st inst.

OUR LETTER BOX.

AOE FOR ROOSTING (*White Dorking*).—If the fowls can and do find a tolerably sheltered and comfortable spot, it will not hurt them to roost. The nights are short at this time of year, and sometimes they are warm. We do not think it will hurt them at this time of year.

FLEAS IN POULTRY-HOUSE (*J. G.*).—Sweep the walls with birch brooms. Stop all cracks, fill all holes, then lime-white the whole of it, putting it on thick and wet. Take off the surface of the floor, and put down another of clay and lime, or chalk mixed, and rammed or trodden down hard. Very often the fowls bring the fleas into the house instead of catching them there. Wherever fowls cannot take their dust bath they will have fleas. They should have heaps of dust, road grit, and bricklayers' rubbish about their haunts. This is the only sure preventive against vermin.

EGGS UNPRODUCTIVE (*Mrs. Dallas*).—Your complaint is almost the universal one. From all quarters people write to ask why their eggs hatch so badly. We attribute much of it to the bitter east wind. We do not know what the "winter wind" was in Shakespeare's time, but man's ingratitude must be very great indeed if it be worse than the wind we have had for some months. It makes the hens sit hollow; if they are in contact with it, it makes them fidgety; if the eggs are left a little longer than usual while the hen is off, it dries and chills them. We believe much disappointment will be prevented if the hens are always confined when they are sitting. We do not mean to be shut in an outhouse with a locked door, but at liberty to leave the nests if they choose; but to be shut in a small basket. We have made capital nests with butter firkins, sometimes knocking out the top, sometimes the top and bottom. In these cases we have a lid to cover the top. We have just passed through the season for hatching Pheasants' eggs. As the eggs of these birds are to be had only for a limited period, and cannot be replaced if spoiled, every precaution is used to avoid failure. In many cases the boxes in which the hens sit are so low they do not allow the birds to raise themselves off the eggs. Wholesale loss, such as you speak of, is unknown to them, and, viewing the hatching season now drawing to a close, we are disposed to think the subject of sitting is not sufficiently studied. We long we promise our readers a paper on the subject. In the meantime we advise our correspondent to shut her sitting hens in the tub in which they are, and to moisten the eggs every day after the first week when the hen is off the nest.

BEES BUILDING FROM THE BOARD AND SIDES OF GLASSES (*Hortus*).—When bees work upwards in glasses their combs often fall over, and much time and labour are lost in repairing damages and renewing the fabric; there-

fore it is better to have some sort of wooden framework inside, with guide combs affixed, to enable the bees to work with effect and economy of labour. We ourselves have long ago discarded glasses, and use low supers with side windows.

DYSENTERY IN LIGURIANS (*An Ulverston Bee-keeper*).—Your case is an unhappy one. There is no cure for dysentery so good as to transfer the bees to an entirely new hive, which is easy at this period of the year. But we never heard of dysentery so late in the season as this. There must be some peculiarity in the position or circumstances of your stocks of which we are ignorant. We should drive out the bees, and if necessary make an artificial swarm of them, or it may be enough to cut away the foul comb.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
	Barom- eter at 32° and Sea level.	Hygrome- ter.		Direction of Wind.	Temp. o Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature.		In- sun. On grass	
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1873. May and June.	Inches	deg.	deg.	N.	deg.	deg.	deg.	deg.	deg.	In- sun.	
We. 28	30.196	50.3	36.9	N.	54.7	59.9	46.1	85.2	43.1	—	
Th. 29	30.414	55.2	49.7	N.	53.4	66.6	43.3	117.8	40.0	0.110	
Fr. 30	30.269	52.4	48.2	N.	55.3	66.7	47.5	118.8	47.7	—	
Sat. 31	30.167	52.8	48.4	N.W.	55.0	63.2	42.1	121.0	39.6	0.068	
Sun. 1	29.875	62.5	51.0	N.	56.6	61.8	44.5	118.7	45.0	0.028	
Mo. 2	30.800	59.3	54.8	N.	54.3	70.7	46.8	129.9	43.6	0.274	
Tu. 3	29.816	66.7	55.0	E.	55.6	71.0	48.9	120.3	47.6	—	
Means	30.115	54.2	50.6		55.0	63.3	45.6	114.0	43.8	0.450	

REMARKS.

28th.—Pleasant day, cloudy at times and cool; sunshine good part of the day.

29th.—Brilliant morning; rather cloudy afternoon; fine evening, but rain at 11 P.M.

30th.—Fine bright day, though cool and rather cloudy at intervals.

31st.—Cool cloudy morning; fine and warm in the afternoon.

June 1st.—Windy and dull; early rain at 8.45 A.M.; heavy shower. Rather dull day, and very cold in the evening.

2nd.—Fine and bright; rather cloudy between 5 and 6 P.M., but on the whole a very enjoyable day.

3rd.—Rain heavy at 4 A.M.; thunder at 8 A.M.; dull till about 11 A.M.; after that time very fine, bright, and warm.

Temperature nearly the same as last week, one or two days (notably June 1st) being very cold. Owing to hot sun and cold winds the temperature of the ground has continued to rise, while that of the air has been stationary or cooler.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 4.

SUPPLY and demand have both improved, and a steady amount of trade pervades both wholesale and retail markets, the fine display of plants and flowers forming a considerable attraction for the general public. Prices have remained steady both in English and foreign produce. Heavy consignments of new Potatoes are again to hand from the Mediterranean, Portugal, France, Germany, and the Channel Islands.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	0	5	0	Mulberries.....	1	0	0	0
Apricots.....	doz.	2	0	3	Nectarines.....	doz.	15	0	30
Cherries.....	box	2	6	4	Oranges.....	100	4	0	10
Chestnuts.....	bushel	0	0	0	Peaches.....	doz.	15	0	30
Currants.....	4 sieve	0	0	0	Pears, kitchen.....	doz.	1	0	3
Black.....	do.	0	0	0	dessert.....	doz.	6	0	13
Figs.....	doz.	6	0	10	Pine Apples.....	lb.	8	0	12
Fibers.....	lb.	0	0	0	Plums.....	4 sieve	0	0	0
Cobs.....	lb.	2	0	2	Quinces.....	doz.	0	0	0
Gooseberries.....	quart	0	3	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	6	0	12	Strawberries.....	1/2 lb.	6	0	16
Lemons.....	100	6	0	10	Walnuts.....	bushel	15	0	30
Melons.....	each	6	0	12	ditto.....	100	2	0	2

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0	6	Mushrooms.....	pottle	0	0	10
Asparagus.....	100	3	0	6	Mustard & Cress.....	punnet	0	2	0
French.....	6	0	12	9	Onions.....	bushel	4	0	10
Beans, Kidney.....	100	1	6	2	Pickling.....	quart	0	6	0
Beet, Red.....	doz	1	0	3	Parsley per doz.	bunches	0	0	4
Broccoli.....	bundle	0	9	1	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	1	Peas.....	quart	2	0	0
Capiciums.....	3-100	0	0	0	Potatoes.....	bushel	6	0	9
Carrots.....	bunch	6	0	0	Radishes.....	doz.	0	0	0
Cauliflower.....	doz.	3	0	6	Round.....	do.	0	0	0
Celery.....	bundle	1	6	2	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	6	4	Rhubarb.....	bundle	0	6	1
Cucumbers.....	each	0	6	1	Salsify.....	bundle	1	0	1
pickling.....	doz.	0	0	0	Savoy.....	doz.	2	0	6
Endive.....	doz.	2	0	0	Scorzoneria.....	bundle	1	0	0
Fennel.....	bunch	3	0	0	Seakale.....	basket	0	0	0
Garlic.....	lb.	0	0	0	Shallots.....	lb.	0	3	0
Herbs.....	bunch	0	3	0	Spinach.....	bushel	2	0	3
Horseradish.....	bundle	3	0	4	Tomatoes.....	doz.	2	0	3
Leeks.....	bunch	0	2	0	Turnips.....	bunch	0	3	0
Lettuce.....	doz.	1	0	2	Vegetable Marrows.....	0	0	0	0

POULTRY MARKET.—JUNE 4.

PRICES are still maintained, and the scarcity of Ducks is unusual.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	6	0	8	6	Pheasants.....	0	0	0	0
Smaller ditto.....	5	0	5	6	Partridges.....	0	0	0	0
Chickens.....	3	6	4	0	Hares.....	0	0	0	0
Goslings.....	7	0	7	6	Rabbits.....	1	5	1	6
Green Geese.....	0	0	0	0	Wild ditto.....	0	9	0	10
Ducklings.....	4	6	5	0	Pigeons.....	0	10	1	0

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 12—18, 1873.	Average Tempera- ture near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	
12	TH	Royal Botanic Society's Show closes.	71.4	46.1	58.8	21	45	af 3	15	af 8	36	10	163
13	F		71.9	47.4	59.6	20	44	3	15	8	20	11	164
14	S		72.6	47.9	60.3	19	44	3	16	8	50	11	165
15	SUN	1 SUNDAY AFTER TRINITY.	72.8	48.2	60.5	19	44	3	16	8	Morn.	34	8
16	M		72.6	48.3	60.4	18	44	3	17	8	13	0	166
17	TU	Meeting of Zoological Society, 8.30 P.M.	72.9	47.3	60.1	23	44	3	17	8	30	0	167
18	W	Royal Horticultural Society's Fruit, Floral, and General Meeting.	72.3	50.4	61.3	21	44	3	18	8	46	0	168

From observations taken near London during forty-three years, the average day temperature of the week is 72.3°; and its night temperature 47.9°. The greatest heat was 90° on the 12th and 13th, 1842; and the lowest cold 30°, on the 15th, 1850. The greatest fall of rain was 1.46 inch.

APPLE TREES AS DWARF BUSHES.



VERY large proportion of the readers of THE JOURNAL OF HORTICULTURE are also the owners of small gardens, and to such a few practical details of the culture of the Apple tree as a dwarf bush may be useful. The instructions may seem tedious to those who know "all about it," but to those but little acquainted with the culture of fruit trees this does not seem so clear. A friend of my own, a retired tradesman, who does all the

light work in his garden, has under my direction taken to the summer management of his Vines and fruit trees. On one occasion after I had clearly explained the pinching and training of the Vines, and shown him how easy it was, he said, "Yes, it seems easy to you, but to me it is very difficult." So in our writings, if we wrote only for trained gardeners we might take a good deal for granted; but in writing for the uninitiated even minute details are important.

A well-trained line of dwarf bushes worked on the Paradise stock is a very pretty sight in any garden, and they offer the following advantages:—The trees are easily managed, being always under the control of the cultivator; the dangerous practice of using long ladders or climbing amongst the branches is unnecessary; a great variety of fruit can be obtained from a small space of ground; and the trees worked on this stock, and trained as advised, will come into bearing much sooner than they would worked on the Crab stock, and planted as standards. A little of my own experience may be useful here. When I entered my present situation the kitchen garden was encumbered with old Apple and Pear trees in every stage of decay and canker. Planting young trees amongst them had been tried, but after a few years canker invariably attacked them. Although the trees were unsightly objects, and overlying the ground so much that vegetables did not succeed, they bore tolerable crops of fruit, and though it was of inferior quality, there was no other source of supply; so we could not destroy all the trees at once, but borders were formed 9 feet wide on each side of the main walks—this space was cleared of all the old trees growing on it. The next operation was to trench the ground 2 feet deep, also as the soil was poor, some decayed manure was added, and a good barrowload of turfy clayey loam to each 3-foot trench. The trees were planted about 6 feet 6 inches from the Box-edging, and 6 feet apart; the remaining part of the border being planted with Gooseberry and Red Currant bushes, and that part nearest the Box-edging was made available for Strawberries, Lettuces, and other small crops. Though all the young Apple trees that were planted previous to this were subject to canker, none of those planted in the trenches and prepared borders have been affected in the least. I may add that they were all removed a second time, the borders being trenched over, and the trees being replanted with plenty of maiden loam round the roots. When the

young trees came into bearing, all the old ones were removed.

Borders planted as I have described either with dwarf bush or pyramid-trained trees look very well in a kitchen garden, and where the garden is moderately large, and two walks run parallel to each other throughout the length of the garden, the space within the walks and borders may be laid-out in squares for the usual kitchen-garden crops. Of course, if the owner of a garden determines to plant dwarf trees, many other positions may be assigned them according to the taste of the owner, size and form of the garden, &c. But to all intending planters I would say, Prepare the ground well, especially if it has been long used as a garden; do not attempt to plant unless the ground has been trenched, and if the soil is light, some clayey loam should be added to it. If the soil is very poor, some decayed manure may be worked in. When the trees are planted, a hole sufficiently large to allow the roots to be spread out to their full extent should be dug, and if possible some rotted turfy loam should be placed under and over the roots.

Besides preparing the ground well, it is also very important to obtain trees on the proper stock. If the old Crab or wild Apple stock is used, the trees would have a greater tendency to produce young wood than to form fruit or blossom-buds, and they would not come into bearing so early. The French Paradise stock is the best of all for dwarfing the trees and inducing fruitfulness; but there are, doubtless, many forms of Paradise stocks, as they have been obtained in many ways. When the old trees were rooted out of the garden here I found one with a host of suckers clustering round the bole; all these were pulled out with portions of roots attached, and planted. All of them had a tendency to send the roots out near the surface, which is one of the most valuable characteristics of stocks for small gardens. They were worked with different sorts of Apples, and came into bearing very early after being worked.

To those intending to purchase trees, it will be necessary to apply to some nurseryman who understands the nature of stocks, and also the ground to be planted. Trees are, no doubt, to be obtained at a cheap rate from vendors who know very little about the article they are selling, but it is a waste of time, labour, and money to purchase trees wrongly named and not worked on the right stock. Two-year-old trees are the best, and if possible they should be selected in the nursery in the autumn, and removed as soon as ready. The ground should have been prepared some time previously, and be ready for the trees when they come to hand. If the proper stock has been used for grafting upon, the young trees will be more or less furnished with blossom-buds, and many of them will bear an apple or two the first season after being planted. It is as well to allow them to remain to prove the sorts. Trees grafted on the French Paradise stock are worked close to the surface of the ground, and in planting them the soil should just come in contact with the lower part of the union, and a dressing of rotted stable manure round each tree will

be very beneficial; this should be allowed to remain all the summer, as it keeps a uniform temperature and moisture round that part of the ground where the roots are; it also causes an emission of active rootlets near the surface of the ground.

Nearly all the pruning and training required should be done in summer. To allow fruit trees of any description to make strong young shoots, and to prune them when the trees are at rest, is very injudicious treatment. Cutting or pinching-back the young shoots to a certain number of leaves on all the varieties indiscriminately is bad practice, as some sorts make three times as much young wood as others. I examined a large plantation of young trees not long ago, and many of them were perfect thickets of wood through summer-pinching; the wood had not been thinned-out, consequently sun and air had not free access to the heart of the trees, and blossom-buds were formed very sparingly. The young shoots should be thinned-out and stopped about midsummer, and the final pruning may be attended to about the end of August. The branches should be well thinned-out; they had far better be too few than be too much crowded, as if they are too numerous the fruit will not ripen well, nor will blossom-buds be formed for the ensuing year's crop. The length to which the young wood must be cut-back will be regulated by the intentions of the cultivator with respect to his trees. If these are to remain very dwarf, the young wood must be cut-back closely; or they may be allowed to grow to a considerable size by only taking the points out of the young wood.

Sometimes the trees have a tendency to grow with too much vigour, and if such is the case blossom-buds will not form freely. Generally this is caused by the trees being planted in soil that is too rich. The best way to check this over-luxuriance is to lift the trees, and replant them in pure loam, or they may be only partially lifted; but either way the operator must be careful not to injure or bruise the roots in any way. It is best to form a circle round the trees, large or small according to the size of the trees. A trench must be dug to the depth of 18 inches or 2 feet, cutting away all the roots extending beyond the radius, then work with a fork under the ball of earth, so that any roots running into the subsoil may be cut away. It is best to remove the old soil, and replace it with fresh loam.

There are two insect enemies which are special pests on the Apple trees in this neighbourhood—viz., the larvæ of the gigantic Goat moth (*Cossus ligniperda*); they eat into the heart of the tree and cause much damage. They are destroyed by having a wire thrust into the hole, but they have a habit of winding about so that they are not easily reached. A more troublesome pest still is a small caterpillar which eats into the hearts of the fruit, and causes it to drop in an unripe state. It answers to the description of *Tinea pomonella*. The way we get rid of them is to go round the trees daily and pick up all affected fruit and destroy it. The Bombyx *Neustria* in a caterpillar stage devours the leaves; they live in colonies, sheltered by a web-like tent, and should be picked off by hand and destroyed when in an early stage of their development. The eggs may be found in the winter deposited in cells, and firmly glued in rings round the small twigs.—J. DOUGLAS.

ORNAMENTAL PLANTING.—No. 3.

VERY much of the beauty and life of our English landscapes fleets on the wings of the autumnal winds which, sweeping off the pale and yellow leaves, render most trees that are indigenous, as well as many acclimatised exotics, appear cold and bare. On all sides the monotony of bare branches assails us, and we involuntarily long for the warmth and fullness of aspect that is gone. It is then that the value of evergreen forms is fully appreciated. It is the artist's time of trial, when the eye of able criticism tests his work at such a period of the year, for it is then that the forms "with verdure clad" stand out in such bold and striking contrast to those without foliage, that the intention and aim of the planter may be read like a book. It is in reality a page of nature embellished by art, and its effect upon a sympathetic and appreciative beholder will be very much in proportion to the manner in which it has been wrought out. I qualify this assertion somewhat, because, as Emerson says—"If you criticise a fine genius, the odds are that you are out of your reckoning, and, instead of the poet, are censuring your own caricature of him;" and so we might say, rather, that the effect produced upon the mind is pretty much in proportion to its power of comprehension.

The scene is tame, flat, and heavy; our object, therefore, must be to impart relief, richness, and warmth of colouring. No mixed style of planting will answer in this instance. A crisp bold contrast is required rather than a soft, harmonious blending, and in striving to effect this by the introduction of elumps of kinds possessing strongly-marked characteristics, we again turn to the Conifers for our materials. Of these the familiar form of the Scotch Fir immediately claims notice, and deservedly so too, for its admirable fitness for such a purpose has long been an established fact. The dense mass of healthy dark green foliage with which it is invariably clothed, the bright reddish hue of its bark, the large size to which it grows, its picturesque appearance when old, its hardy nature and suitability for the most exposed positions, and the marked effect which it so quickly produces, are among the many excellencies for which we so highly value it. We have nothing better wherewith to clothe such bluffs and headlands as are sometimes seen jutting-out in bareness and sterility in very exposed situations, or to form snug shelter for a house standing upon some sweeping slope or steep hillside. Without dwelling further upon the numerous excellent qualities of this useful tree, it may be well to offer a word of caution on the management of elumps and belts of it. The young trees are usually planted so thickly as to require frequent attention in thinning till none but the permanent trees remain. Watch the trees closely, and let the growth and spread of the branches be the guide as to distance apart, always remembering that for a tree to attain its fullest size it must have abundance of healthy branches, and foliage tolerably exposed to atmospheric influences, and however hardy and sturdy it may be, if these conditions are wanting it may certainly exist but it will not thrive. Very little good can be done to an old neglected Pine elump, for when the trees have received little or no attention after they were planted for, perhaps, a generation, the outer row will be found to contain all the largest trees, while those in the interior, taken singly, are wretched objects unworthy to be called trees, and are mere slender sticks drawn up and attenuated, and with just a tuft of living branchlets at the top. Now, if one were to act upon the first impulse most of the spoilt trees would be taken down, but if this were done it would seriously affect the appearance of the clump, and the remaining trees would probably be blown over by the first gale of wind; it is better, therefore, to leave such old elumps intact, only removing those trees that exhibit symptoms of decay.

Next comes the beautiful Silver Fir (*Picea pectinata*), which appears to me to be equally hardy with the Scotch, and is certainly much more elegant in appearance. It is a wonderfully vigorous tree, thriving in a poor shallow soil to a degree that is equalled by few other trees with greater advantages. I had ample proof of this about a year ago when making a deep cutting for a road through a thick bed of gravel covered upon its surface by about 10 inches of soil of the poorest description; in this soil only a few feet from the edge of one side of the cutting there are three noble examples of this Pinus which must be nearly 100 feet high, models of symmetry, in most perfect health, and clothed with branches to the ground. Nor have they the advantage of shelter, for they stand upon a western slope facing a wide expanse of waste, over which frequent south-western gales sweep with great force. The Norway Spruce, too, forms a fine elump. I was sorry to see such a bad account of it from Mr. Robson; when it does succeed there are few trees even among Conifers that equal it in vigour or beauty. There are fine elumps and belts of it at Maresfield Park, the seat of Lady Shelley, that are so beautiful as to tempt anyone to plant it.

The Deodar, Wellingtonia, Araucaria, Douglas Fir, Yew, and Pinus macrocarpa all form good elumps; so, also, do many Evergreen Oaks. The Portugal Laurel likewise blends into a large mass of deep green glossy foliage that is very effective. Nor must I omit the common Holly, the most hardy and robust of all evergreen shrubs. Unaffected by drip, or smoke, or poverty of soil, it flourishes equally well in deepest shade or brightest sunshine; only let it become fairly established, and further care is unnecessary. It worthily ranks high as a decorative shrub, it is at all times beautiful, and when laden with its bright berries it is quite unique. There is no better plant for clothing a mound with perennial greenery, and in assigning it a prominent position among select shrubs for grouping, I would strongly advise the preparation of mounds for it whenever a bold and striking effect is required. The double Gorse (*Ulex europæa flore-pleno*), though not so accommodating in its nature as the Holly, is equally hardy, and

nothing can surpass the gorgeous display produced by a clump of it when in flower. The white Spanish and the common yellow Broom are both useful for dwarf clumps. The white kind in particular is very valuable for its air of sprightly grace, and the green bark renders both kinds ornamental even when they are not in flower.—EDWARD LUCKHURST.

BAD SOIL FOR ROSES.

WILL you inform me how to improve the worst kind of sandy gravelly soil, which we call here in Dorset "ridscript?" All my garden books give pages of instruction as the improvement of clay soils, but no work that I can find offers any advice as to how I can improve my "unkindly soil." What I do at present, though at immense labour and expense, is to remove it 2 to 3 feet deep for Roses, and, indeed, every kind of flower or Conifer; but if you could tell me a way of improving this miserably poor soil, or the names of any flowers which will grow freely in it with the aid of unlimited manure, I shall be very much obliged to you. A friend of mine, a most successful rosarian at Exeter, laughed to scorn the idea that I had a bad soil. "A man that can show Roses like you do to talk of having a bad soil is utter bosh," was the polite response I met with, and on my assuring him that every tree grew in soil that I had prepared and wheeled there myself, I saw that he thought I was romancing. Mr. Rivers, of Sawbridgeworth, states, in the "Rose Amateur's Guide," that there is no soil so bad that the Rose when worked on the Manetti stock will not do well in. So two years ago I sent him a hamper of my soil, and asked him whether he could grow Manetti Roses in it, to which he replied that he would try; but I regret to say that owing to an oversight he has not been able to tell me the result of the trial.

I send you a small box of the soil by post, and I shall be much obliged if you will tell me what kind of flower, or shrub, or Conifer, or even forest tree, will grow in such a soil; and if you can name one flower worth growing, I promise to do my best to improve it by excessive cultivation. If at the same time you will tell me any way of improving the soil short of removing it, so that I may grow my Roses without this drawback, you will confer on me the greatest possible kindness.—JOHN B. M. CAMM.

[Yours is about the most hopelessly bad soil that we have ever seen, and your remedy seems the only likely one—that is, removing it. It can be materially improved by adding clay and loam, with leaf soil; it has the material to give Roses colour, provided you add plenty of other ingredients to it. You deserve much praise for the great success which has attended your efforts at Rose-growing, and we are not surprised at your being so decided an advocate for the Manetti stock, of which, if we remember aright, you have advocated the cause in another gardening periodical, as experience will have told you that in your soil no other stock is likely to suit. We cannot, we fear, give you much information which you do not already possess. We should be inclined to think superphosphate of lime would be more efficacious than guano, and that a slight top-dressing of nitrate of soda in the spring and autumn would be of great service. Sedums, Saxifrages, Antirrhinums, Wallflowers, Foxgloves, Arabis, Aubrietia, Armeria, Sweet Williams, Valerian, Variegated Thyme, Cistus, Phlox verna, frondosa, Nelsoni, Alyssum, Artemisia, dwarf Dianthus of sorts, Helianthemum of sorts, Linaria, Linum of sorts, and Sempervivums, are the plants most likely to succeed with you.]

WIREWORMS AND THE GLADIOLUS.

A GENTLEMAN personally unknown to me, but a lover of the Gladiolus, sent me the other day two shoots which had come up in a bed of some bulbs which he had purchased this season. The shoots appeared above ground and then died-off. In sending them he asked, Was this the disease? In my reply I said, No, but that it looked suspiciously like the effects of wireworm. Before he received my letter, however, he had found out that my surmise was true, for finding another going off, he had taken heart of grace and examined his bulbs, and found a couple of the "varmint" at every bulb. I was the more alive to the subject from having had my bulbs attacked in a similar manner three years ago, as I have mentioned in my little work on "The Gladiolus," page 12. It is too late to warn people this year, as all the planting is done; but I would strongly urge that the advice sometimes given of planting in

new ground should never be followed; it is a most dangerous practice. One may escape, but the chances are that the wireworm will master him. The worst of these destroyers is that soot, lime, and such-like things seem to leave them positively unharmed, and the only way of getting rid of them is by hand-picking. We are obliged to do this with the soil we use for Picotees, and if I had any doubt of the compost I was using for Gladiolus I should do the same; and this is one of the reasons that has made my friend Souchet say that good market garden soil is the best calculated for the growth of the Gladiolus. It is pretty sure to be free from wireworms, and mellow in other respects.—D., Deal.

NOTES ON GERANIUMS.

I HAVE read with deep interest the notes of the Rev. C. P. Peach on the merits of Geraniums at pages 111 and 300; and though I agree with him to a certain extent, I do not do so in the main.

I purchased the new sorts which Mr. Pearson sent out last year, and the set of new ones sent out by him this season I received early in the year; moreover, I last year saw those sent out in the present season on the trial beds at Mr. Pearson's.

Of crimson, Dr. Tate stands pre-eminent, and when once it is known it will be as much sought after as the famous Bayard. Mr. Pearson considers it one of the very best he has raised. It is one of the new ones of last year. Rev. T. F. Fenn is, as described by your correspondent the Rev. C. P. Peach, distinguished by a fine large truss, with a wonderful freedom of inflorescence, good in habit, and a fitting companion for Dr. Tate. Samuel Bennett is dropped out of the catalogue this year. I cannot speak so favourably as your correspondent respecting Miss Silbury, Mrs. Vincent, and Miss Sanders for outdoor decoration, yet they are all good for pot-culture.

As a red or rosy crimson, Colonel Holden is the best, and to all appearance will prove one of our most useful bedding varieties. Shakespeare and Mrs. Vincent Fenn disappointed me; in all honesty I must put them down as only second-rate. As they seem to possess some of the blood of Violet Hill, I shall give them another trial.

Coming to the scarlets, I must offer an encomium on your correspondent's namesake, the Rev. C. P. Peach. By many who have seen it, it has been considered the best scarlet we possess, and as a pot plant under glass its colour comes out to perfection. When turned out of doors it is too straggling in habit, and a very bad grower. Mrs. Hetley is likely to prove a formidable rival to it. In the reds, Amy Robsart is a decided acquisition; it is very dwarf and compact, of fine habit, remarkably free-flowering, and its beautiful trusses rise well above the foliage.

Of rosy pinks we have Rose Bradwardine, Amaranth, and Florence Durand, which stood almost unscathed during the unfavourable weather we experienced last year. Amaranth is becoming so well known that it scarcely needs any eulogium here; and Florence Durand is so good that it deserves a tribute of praise. It is pre-eminent in the conservatory; and its freedom of bloom and strength of petal render it equally good for outdoor decoration. Rose Peach is perfectly distinct in colour, handsome as a pot plant, but I fear will never become popular. The young lady will require very good cultivation and high keeping before she can be brought out so as to secure the admiration of the multitude. Mrs. Hole is a magenta of the colour of Arthur Pearson, but being so very dwarf and compact in habit, and having fine large trusses produced in such abundance, it is likely to become much more popular.

The above are what I consider the cream of what Mr. Pearson sent out in 1872. If I am wrong in my estimate, either Mr. Pearson or some other correspondent who has grown them will, perhaps, correct me.

I must, before concluding these rambling notes, add a word about those of this year. Contessa Quarto and Mrs. Fytche are in advance of all that have gone before them. They possess superior properties for bedding purposes, and as the progress in pink kinds has been but slow, these will be hailed with delight by those who have to cater for the flower garden. Mrs. Augusta Miles and Mrs. Holden are also good, either for in or out-door use; their large trusses resemble those of a finely-grown Hydrangea. Of the very dark crimson, General Outram and Edward Sutton are of sterling merit, and only require to be seen to be appreciated.

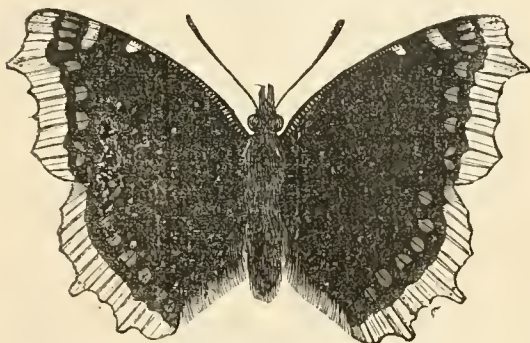
I have tried to make a selection from the numerous varieties

raised and sent out from Chilwell; what we have approved and recommended cannot fail to give the utmost satisfaction.

Of old sorts, Bayard and Douglas Pearson are still favourites, and are likely to hold their position for years to come.—*QUINTIN READ, Pleasley Vale, Mansfield.*

THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 5.

THE season of 1872 will stand in entomological annals as rather memorable, because that usually rare and beautiful insect, the Camberwell Beauty, appeared in so many places throughout these islands, and here and there it might almost be said to be numerous—notable in entomological history, and also a “red-letter” year in individual experience, since many collectors actually caught and placed in their cabinets a butterfly they had little or no expectation of ever seeing alive in Britain. Some caught these insects, and some, unfortunately, only saw them, and could not secure a specimen, for the species flies both high and strong. The fascinations of flower-beds sometimes bring this and other wary butterflies within range of the net, but the stroke must be rapid and well aimed. One circumstance which made the appearance of this rare butterfly more remarkable was the unquestionable fact that the year was not at all favourable for most insects of the Lepidopterous order, which were greatly diminished in number by the cold ungenial spring.



*Vanessa Antiopa (Camberwell Beauty).**

It may be questioned whether the Camberwell Beauty (*Vanessa Antiopa*) was ever common in England, as are some of its congeners, not even when many more streams and brooks than we now boast were fringed by shady willows, upon which the caterpillar of the species prefers to feed, though it has been found upon the Birch, and also upon a plant as dissimilar to these as the Nettle (*Urtica dioica*). It may have been pretty plentiful in the time of the old “Anrelian” Moses Harris. So thinks Mr. Newman, though Lewin states that to his belief none were observed in England between 1748 and 1789. From its appearing in abundance at Camberwell during a few years the insect got its well-known name, and also that of the “Grand Surprise;” but as far as the former name is concerned it might as well have been called the Battersea Beauty, for many specimens were taken there towards the end of the last century, and in adjacent spots in Surrey. “Beauty” and “Battersea” are scarcely associable now, for that district is largely given over to factories and railway lines; the park alone is a redeeming feature, though scarcely situate in Battersea proper.

No record of the butterfly's re-appearance last year in these two old haunts has been made, though specimens were taken at Dulwich, and several at Shirley, in Surrey. One most singular capture was that made on the 23rd of August, when a fine individual flew into a room near Euston Square—not a promising locality for butterfly-catching. Others were observed in London suburbs and in the vicinity of various towns, and many more in open places throughout England, and some even in Scotland. If we were to accept the theory so warmly advocated by some, that these butterflies came last year as visitants from Norway, it might lead us to expect that more would occur in North Britain than in the south, which did not prove to be actually the case. The eastern counties of Eng-

land yielded most, and though a few were seen on the coast, the preponderance occurred inland.

Vanessa Antiopa is not at all a scarce butterfly in many continental countries, occurring every year with some regularity. The species occurs in France, though not so plentifully as in central and northern Europe, and therefore it is not only possible, but most probable, that some individuals may cross the Channel, even if none indulge in a longer flight, in order to reach our shores, though what they should wish to visit us for it is not easy to determine. Entomologists of a past generation used to rely upon the white border as the distinctive mark whereby a true Briton of this species might be at once known; the continental butterflies, it was assumed, had the margin yellowish. But here we are at sea with regard to the captures of 1872, since some of them had white borders and some yellow: hence, say some, a part of those seen and captured were immigrants, and a part natives; but this does not satisfactorily clear up the mystery, because both were occasionally taken under precisely the same circumstances. Again, it is now asserted that *Antiopa* in the Scandinavian peninsula and the Alpine regions has usually a white border to its wings. Still further to complicate the matter, one observer states that a butterfly which came under his notice had a yellow border at first, which afterwards turned white. But really the unquestionably fresh condition in which many were taken completely knocks over the supposition that they had just taken a long aerial journey.

Mr. Newman has justly remarked that the conjecture that the eggs of *V. Antiopa*, “like the seeds of some vegetables, may occasionally lie dormant for several seasons, and not hatch until some extraordinary but undiscovered coincidences awake them into active life,” is baseless, since the eggs of the *Vanesside*, and, indeed, of most British butterflies, hatch very speedily. Then, though some moths, as, for instance, such as *Eriogaster lanestris*, will pass two, three, or even five years in the pupa state, such cannot be the case with this butterfly, whose life-history gives it the imago state in which to pass the winter. Nor can the mature butterfly have its existence prolonged many months amid the changes of our variable climate. The opinion of Mr. Barrett comes, seemingly, nearer the mark, for he says that an examination into its history as recorded shows that individuals are seen in some part of England nearly every year, and as the insect often flies high, others occur that are never seen by entomologists. A sufficient number at any rate occur, as he thinks, to continue the species from year to year. “Most of the young larvæ usually perish from the dampness of the climate, but in 1872 the extreme heat of the beginning of July enabled them to feed up safely.” If there is a probability of the British climate becoming drier, as some argue (though recent appearances are not in favour of this), we may yet have this gorgeous butterfly as frequent a visitant to our gardens as are the Peacocks and Tortoiseshells.

Allusion has been made to the partiality shown by *V. Antiopa* to flowers, especially those cultivated, and, indeed, no sweet compounds appear to come amiss to the insect, and compounds also sometimes which are far from being sweet. The records of its capture in 1872 throw some light upon the butterfly's tastes and habits if we throw a few of them together. At Barnsley one was taken August 23rd on a manure heap; some time in that month one near Chester on cow droppings; one in a Peach house, Melbourne Gardens, Derbyshire, August 29th; three seen in an orchard near Waltham, Lincolnshire; one on September 14th, at Badenhall, Staffordshire, flying with other insects about a tree from which sap was exuding by means of the attacks of the larvæ of the Goat moth; thereupon Mr. Boyes reports from Yorkshire that several of these butterflies came on different days to a garden at Beverley, attracted by the fallen fruit in August, and one was taken at Hull in the highly improper act of sipping from a rum cask. At Old Malton one was taken on a Plum tree. At Oakley, in Suffolk, a butterfly was observed first at the Pig houses and then at the Peach houses, as recorded in this Journal. Though at first frightened off, it returned to the spot and was netted. In a garden at Horsey, in Norfolk, August 29th. Other captures in or near gardens are reported from that and other counties.

Whither do these butterflies go in the winter? it has been asked. At least a fair proportion survive the ungenial season, and come forth to deposit eggs in the spring, in the instance of the *Vanesside*. It was therefore hoped that the abundance of *Antipas* last year would leave a certain balance of them that, defying birds and entomologists, might continue the

* From Figuier's “Insect World.”

choice species this spring. Some hibernating specimens were observed, one in a hollow tree, another beneath a heap of stones, and another under rockwork, and some of the butterflies likewise get into woodstacks, it may be presumed, like their relatives. We will hope that those now coming forth on the wing (for several appearances of *Antiopa* have already been noted) will be spared by the boy insect-hunters, who are rarely discriminating.

Our entomological journals give us no account of the capture of the butterfly in this country in its early stages. The eggs are presumably laid in April and May, and the caterpillars, at least while young, feed in parties—so they report from abroad. I imagine, however, that the account quoted by Rennie of the harm done by these in some districts on the Continent is a mistake, since *V. Polychloros* is more likely to be the insect referred to. This caterpillar has long compound spines, the body and head are black, with a few reddish spots, according to Hubner, and the chrysalis is also blackish and much angulated. These particulars we may, perhaps, verify in Britain during 1873.

A pretty little moth belonging to the Geometrine section is not uncommon in our gardens about this time (there are some counties, however, in which it is rarely seen). Some seasons it would be about after the winter's pupation, in the week I am writing, but the temperature has given it a check. This is the Waved Umber (*Hemerophila abruptaria*). In the daytime it sits upon walls and palings, where it easily escapes notice when the latter assimilates to its own colour; and even upon a tarred paling it deceives the eye sometimes, as it rests with expanded wings, looking like a withered leaf which has been fastened there by some spider. The wings are beautifully varied with lines and tints of brown, in some specimens of a much deeper hue than in others; but the most conspicuous markings are central dots on the forewings, with a long deep brown patch, bounded by a wavy black line; the hindwings, which have scalloped margins, show also a broad dark band, edged by black on one side, and fading into light brown on the other. The males may be at once distinguished from the females by their feathered antennæ. Of course these moths must be on the wing at some hour in the evening, but I have never caught one flying.

Occasionally there is a second emergence of this moth in August, owing to the rapid feeding-up of the summer caterpillars; this rarely occurs in the vicinity of London, however. The ordinary course is that the caterpillars hatch-out in June or July, feeding in gardens upon the Lilac, and less frequently upon the Rose, but never in such a number as to be in any degree injurious. They will also eat leaves of other plants, as the White Thorn and Black Thorn. These are of a dull brown colour, and "loop" in walking; in the day they are frequently at rest on twigs. Mr. Hellins says that when first hatched they have a purple stripe on the back, which disappears at the first change of skin. When they have passed the last change of skin they exhibit a white ring behind the head, which is very conspicuous. Newman states that the adult caterpillar "spins a silken cocoon on the twigs just behind the point where two twigs separate." I have not seen the cocoon thus placed, and in a state of captivity the caterpillar usually forms a cocoon on the surface of the earth. The Small-waved Umber (*Phibalapteryx vitalbata*) has a superficial resemblance to the preceding, though less in size. It is not of general occurrence in gardens, though a straggler may occasionally fly in. This caterpillar is a feeder on the "Traveller's Joy" (*Clematis vitalba*).—J. R. S. C.

ROYAL HORTICULTURAL SOCIETY'S BATH SHOW.—We understand that application has been made by one firm in the neighbourhood for three thousand tickets, which will be distributed among the employees. Mr. Eyles has been again busily engaged allotting the space for the tents and machinery, the re-arrangement of which was rendered necessary by the large number of entries. In the principal tent a quantity of perforated stones obtained from Claverton Down has been artistically grouped so as to form a grotto and cascade. It is intended to adorn this ornamental erection with Ferns, and when finished it is likely to prove one of the "lions" of the Show. We are glad to hear that the *soirée* of the Microscopical Society will be one of the special elements of attraction during the week. The Bath and Bristol Associations have united for the occasion, and as a result of the exertions of the combined bodies, we are promised such a collection of microscopes the

like of which has not been heretofore seen in the West of England. The exhibition, which will be held on the Wednesday evening (June 25th), will be devoted to the illustration of the growth, structure, and products of plants, and to the animal pests affecting the vegetable world.—(*Bath Express and County Herald*.)

ROYAL BOTANIC SOCIETY'S SHOW.

JUNE 11TH AND 12TH.

THE second summer Show of this Society opened yesterday, and in the floricultural department is good, though perhaps thinner than usual. The exhibition of fruit, however, is meagre in the extreme. The weather on the first day was favourable; and as Messrs. Lane's Rhododendrons were in full bloom, the Exhibition, taken as a whole, was so far an enjoyable one.

In stove and greenhouse plants Mr. Baines, gardener to H. Micholls, Esq., Southgate, as usual takes the lead with magnificent specimens, which have nearly all been noticed in the reports of previous shows. He is first for twelve, Mr. Ward being second, and Mr. J. Wheeler, gardener to J. Phillpott, Esq., Stamford Hill, third, and is also first for six, with Mr. J. Wheeler second, and Mr. Kemp, gardener to the Duke of Northumberland, Albury Park, third. In the nurserymen's class Messrs. Jackson & Son, of Kingston, Mr. Morse, Epsom, and Mr. Williams are prizetakers with excellent collections. For twelve in 12-inch pots Mr. Ward and Mr. Morse take the foremost positions.

Of Orchids there is a very good show, and the specimens are well flowered. Mr. Ward, in the amateurs' class for twelve, has fine specimens of *Masdevallia Harryana*, *Odontoglossum Alexandre*, *Cypripedium villosum*, and *Phaleuopsis grandiflora*; while Mr. Cuthbert, gardener to Mrs. Adams, Enfield, and Mr. G. Wheeler take the remaining prizes. Mr. Ward is again first for six. In the nurserymen's classes Messrs. Williams, Bull, Morse, and Jackson & Son have excellent examples of *Aërides Lobbi*, *Thunia Bensoniæ*, and *Thunia alba*, *Miltonia festiva*, *Anguloa Clowesii*, and *Cypripediums*. *C. caudatum* from Mr. Williams has eighteen flowers, besides five unexpanded.

Of Roses in pots we only noticed one group, a fine one from Messrs. Paul & Son; but passing to Show Pelargoniums, Mr. Nye, gardener to E. Foster, Esq., Clewer Manor, fairly disposed of all lamentations as to the decline in the quality of the specimens of this flower, by showing plants fully 4½ feet, some of them we should think more nearly 5 feet, in diameter, and bloomed to perfection. Fair Rosamond, Shakspeare, Desdemona, and Mdle. Patti are the largest, but closely pressing on them come Lord Clyde, Woman in White, Alabama, Elegans, and Rob Roy. When we add that Mr. Ward is second, the excellence of the first nine will be the better appreciated. Nestor, Lord Clyde, and Rob Roy, as shown in his collection, are wonderfully fine. Mr. James and Messrs. Dobson, of Isleworth, take the remaining honours; whilst for six, as also for the same number of Fancies, Mr. Weir and Mr. James take the lead.

Heaths, Palms, fine-foliaged plants, and Ferns are very well represented, Mr. Baines, among others, showing a fine *Sarracenia purpurea*. Both Mr. Parker, of Tooting, and Mr. Ware, have charming groups of hardy herbaceous plants, as well as cut flowers of these. Mr. W. Paul exhibits Tricolor and other Geraniums trained as low standards, and among them Ianthe is very conspicuous by the fine colour of its flowers, and the freedom with which they are produced. He also exhibits baskets of Variegated and Tricolor kinds. Among cut flowers, stands of splendid blooms of *Maréchal Niel* Rose come from R. Webb, Esq., of Reading, and stands of mixed kinds from J. Hollingworth, Esq., Turkey Mills, Maidstone, and Mr. Chard, Clarendon Park, Salisbury. Mr. Hooper, of Bath, has fine stands of Fancies—Show, Fancy, and Bedding, also Ranunculuses. Messrs. Jackman & Son, of Clematises, and Mr. Petridge, of Uxbridge, along with a remarkably fine group of Tricolor Pelargoniums, exhibits a rich-coloured highly-scented Clove Carnation. Mr. Parker, of Tooting, has a collection of cut flowers of German Irises and Pyrethrums; whilst Mr. A. Forsyth, of Stoke Newington, exhibits a stand of Chrysanthemums, which in June are certainly unexpected visitants.

Large groups of new plants are exhibited by Messrs. Veitch, Mr. Bull, Messrs. Rollisson, Messrs. E. G. Henderson, and Mr. Williams, also one of succulents by Mr. Croucher, gardener to J. T. Peacock, Esq., Hammersmith. The certificates granted for these were very numerous, and we cannot pretend to give anything like a complete list of them. Messrs. Rollisson had certificates for *Echmea bracteata* and *Gloxinia Brilliant*, the latter answering well to its name, having magenta-flushed crimson lobes. In Messrs. Veitch's group (in which was the rarely-seen *Fremontia californica*, and along with it stands of Clematises), *Aralia elegans*, *Adiantum speciosum*, and *Cypripedium Stonei platyantha* were certificated; in Mr. Bull's, *Dracæna amœna*, *Cyathea Burkei*, *Cycas imperialis*, *Odonto-*

glossum Insleayi leopardinum, *Campsidium filicifolium*, *Croton grande*, *Dracena Fraseri*, and others; and in Mr. Croucher's, *Agave Gilbeyi*, *A. striata* Richardsoni, *A. Baxteri*, *A. Kerchovei*, and two or three more. E. Foster, Esq., had also a first-class certificate for Show *Pelargonium Grand Monarque*, very fine form, rose, veined with deep rose, dark top edged with rose, white throat.

In the Fruit division of the Show there are half a dozen Queen Pines, some of which may weigh 2½ lbs. The best single fruit of that variety, as well as the best pair, is from Mr. Hepper, gardener to E. O. Ledward, Esq., The Elms, Acton. The best dish of Black Hamburgh Grapes comes from Mr. Bashford, East Sutton, Kent; the second best from Mr. Coleman, gardener to Earl Somers, Eastnor Castle—these are very well finished, as also are those from Mr. Bannerman, gardener to Lord Bagot, Blithfield. Mr. Little, gardener to Sir G. East, Maidenhead, is first for a 12-lb. basket. Mr. Bannerman and Mr. Davis, gardener to C. Scholfield, Esq., Hanley, show the best Black Prince, not large, like all the fruit this year. For two dishes of Peaches (distinct), Mr. Coleman is first with A Bec and Early Grosse Mignonne, fine; Mr. Bennett, gardener to the Marquis of Salisbury, an excellent second; and Mr. Bannerman third with Royal George and Millet's Mignonne, which latter, if correct, is a synonym of Royal George, to which, indeed, the fruit on casual examination bore a close resemblance. Hunt's Tawny and Elruge Nectarine from Mr. Kemp, gardener to the Duke of Northumberland, Albury Park, Guildford, walked over the course with the only dishes exhibited.

Of the few Melons shown, the best in the Green-fleshed class is Bellamore Hybrid from Mr. Cross, and in the Scarlet-fleshed Moreton Hall, from Mr. Coleman.

For a single dish of Strawberries, Mr. Davis comes first with President; Mr. Bennett second with Dr. Hogg; Mr. Plumridge third with Sir J. Paxton. The best Cherries are Elton and Black Tartarian from Mr. Miles, gardener to Lord Carington, Wycombe Abbey, and Rose de Lyon from Mr. Ward, Bishop Stortford, the last remarkably fine. Mr. Coleman sends good Brown Turkey Figs, and Mr. Gardiner, Lower Eaitington Park Gardens, several dishes of Apples in good preservation.

EXTRACTS FROM DR. HOOKER'S REPORT ON THE ROYAL GARDENS AT KEW, DURING 1872.

DURING the year 1872 the Royal Gardens were visited by 553,249 persons, an increase of a little more than 6000 over the numbers in 1871. The numbers of each class of visitors were much the same as in last year, except that there was a greater attendance of professional gardeners, an increase attributable chiefly to the greater facilities for naming the Ferns and ornamental herbaceous plants. Increased interest has also been shown in the arboretum as it progresses towards completions and especially in the collections of deciduous trees, the planting of which has in this country, during the last quarter of a century, been to a very great extent superseded by that of Conifers.

The degree to which the displacement of deciduous trees and shrubs by Conifers has extended in England is best illustrated by a comparison of both public and private parks planted during the last century and the beginning of this, with those more recently laid out, and an examination of nurserymen's catalogues gives the same result.

Thus, in the Kew grounds, as at those of Sion House, Bicton, &c., very many kinds of South European, Western Asiatic, and American timber trees, besides numbers of shrubs, still survive, few or none of which are now planted or are to be had in English nurseries; and even twenty-five years ago, when the Kew arboretum was commenced, various American Maples, Oaks, Poplars, Limes, &c., were procured in England, for which resort must now be had to continental nurserymen or to America.

The demand for deciduous trees and shrubs is rapidly reviving, and over and above the interest of this department to botanists, I have every reason to believe that the named collection in the Kew arboretum will soon be as much frequented by planters and landscape gardeners as the Botanic Garden and plant-houses now are by amateurs and professional gardeners.

The American garden at the back of the Palm house, which had not been renewed since its formation in 1847, has been in great part renovated. A named collection of Ivies has been placed along the Rose walk, the species being trained up tree stumps 8 feet high, which alternate with the pillar Roses.

A great improvement has been effected by the Works Department in the painting of the plant houses, both as regards the durability of the composition and the colours used. The introduction of a little blue on the girders of the long succulent house (200 feet long), and the temperate house in the pleasure grounds, has been much approved. The dark green glass with which the Fern houses have been glazed has answered well, and I have had very numerous inquiries respecting its use in this establishment. I have no reason to suppose that it has any specific effect whatever on the plants grown under it, beyond that, by partially intercepting the sun's heat rays, it prevents

scorching of the plants and drying-up of the houses, whence its use in doing away with the necessity for expensive shading during a great part of the year, and in days of alternate sun and cloud, is very manifest, as also in maintaining a more uniform temperature and humidity.

The labour and expense involved in procuring ground tallies for such a large collection are great, and the subject is full of difficulties; I have, consequently, numerous inquiries from public and private establishments, especially in the United States and the provinces, as to the best kind of tally to adopt in public gardens, parks, &c. The tallies should be so firmly planted in the ground as not to be easily removed—so strong as to resist the blow of the butt end of the scythe, so legible as to be clearly read, and, indeed, to attract attention at five paces' distance, and should last many years without repainting. Maw's parian tallies are imperishable, and by far the neatest, but they are shivered by a scythe blow. Cast-iron tallies, well smoothed, and painted black on a white ground (with the best paint, thoroughly ground and mixed), if well done, should last from eight to ten years at least; a great number of these are in use in the arboretum; the best have an oblong top or face of 5 by 4 inches, and a leg 10 inches long. The face is perpendicular (not slanting backwards from the leg), and the top edge is sharp, to prevent birds sitting on it and defiling the writing. Experiments are being made of coating the paint with paraffin, the results of which will be reported hereafter. A trial is being made of Slate, Teak, and Australian Gum-tree wood tallies, 15 by 3 inches, of which the upper 9 inches are painted white with black letters (reading vertically, like a pot tally.)

Hanging wooden tallies are very durable, but are not always easily discovered on the trees, and from hanging obliquely are pulled aside to be read, and hence detached by visitors, who afterwards simply fling them on the ground. They should be of a light wood (good deal answers well), hung with well-tarred twine or strips of oiled hide.

Iron hanging labels, fixed with wire, are very objectionable, their weight and motion in the wind soon breaking the wire.

The writing on the tallies is confined to the vernacular name (given only when in common use), the Latin name with its author's initials, and the native country. Synonyms are added only when the plant is equally well or better known under such. English names not in general use, and especially such as are formed by translating the Latin one, are useless and pedantic. In the case of varieties, the varietal name follows the specific.

The receipts during the year have been 2700 seed packets, and 11,240 plants of all kinds.

The accessions to the herbarium are of exceptional importance as regards novelties. The number of specimens acquired during 1872 has been about 17,500, of which 1500 were purchased, and the rest procured by gift or exchange.

[It is very gratifying to note the continued increase of visitors to Kew Gardens, for it is an unmistakable evidence of the increase of taste for healthy amusement and information. More than 6000 visitors went in 1872 over the previous year, and on Whit-Monday of the present year there were 59,152 visitors, all very orderly and well conducted. This is by far the largest number ever there on one day. On the Whit-Monday of last year there were 37,795 visitors.—EDS.]

THE RHODODENDRON SHOWS.

EVERY year, as June comes round, those marvellous masses of colour at what are called the American Shows are brought before our eyes. They are dazzling in the extreme; once seen they are never forgotten, even by those least sensible to the beauties of plants.

At the Royal Horticultural Society's gardens at South Kensington, Mr. Anthony Waterer, of Knap Hill, Woking, furnishes the Exhibition, and an extensive and excellent one it is, occupying a vast tent at the southern side of the garden. Owing to the backwardness of the season it has only just attained to beauty, and will probably continue in fine condition for a fortnight or three weeks. When we visited it the other day there were many plants only in bud, and several seedlings only coming out. Among kinds more especially conspicuous for their beauty of colour and free-flowering we noticed Alexander Dancer, bright rose, very free; Brayanum, an old and well-known variety; Charles Bagley, extra fine, cherry red; Old Port, rich plum; Stella, pale rose; Titian, scarlet; and Towardii. Mr. A. Waterer has also a similar exhibition at Manchester.

Messrs. Lane, of Great Berkhamstead, as already noticed, make the exhibition at the Regent's Park, and have shown that, though not having peat soil, Rhododendrons can be brought to perfection with them. Their show is now a sheet of bloom, and does great credit to their enterprise in what, as regards

London at least, is to them a new field. We have so often noted varieties of excellence that it seems to be travelling over the same ground again to repeat the names and colours of the best, but the following are especially noteworthy—viz., Sir Robert Peel, Mrs. John Clutton, Lord John Russell, Madame Van der Weyer, Towardianum, Verschaffeltii, Leviathan, Fastuosum flore-pleno, Everestianum, Alarum, Duchess of Sutherland, Lady Armstrong, The Queen, Sherwoodianum, Victoria, Sir Isaac Newton, and Titian.

LETTERS FROM JAPAN.—No. 1.

[The following are extracts from one of a series of letters written to the "Art Journal" by Mr. John Tasker Foster, formerly of York, for many years in the Electric Telegraph Company's service, and now an officer in the employ of the Emperor of Japan as Telegraph Engineer in that country. We are indebted for them to the father of their intelligent writer.]

A VISIT TO JAPAN.—THE KIOTO EXHIBITION.

I WILL endeavour to give your readers an account of Kioto, and a description of the three national exhibitions now being held here, and which are opened to all foreigners who have obtained a passport from their consul. Of course, being in the service of the Mikado I required no such passport, as my officers and guards cleared me at the three custom houses. I left Osaka at 6 a.m. on the 1st May, for Kioto, by Japanese steamer, and I arrived at Fushimi, which is about seven miles from Kioto, where we had tiffin, at 3.30 p.m., and proceeded in jin-ri-shos from that place. A jin-ri-sho is a kind of light spring carriage, which can be covered with a hood in case of rain. I required ten in number to carry myself, my officers, and baggage, and we arrived at Kioto in about an hour and a half. Each carriage is drawn by two coolies. The general speed is about six to eight miles an hour.

Kioto is one of the principal cities in Japan, and was, until two years ago, the residence of the Mikado, where his palace and that of his imperial mother is situated, both being of great extent, and surrounded by walls. Kioto is about forty miles from Osaka, and the principal trade is linen manufacture; in fact, it is the Manchester of Japan. The town is located on a flat area; but a splendid view can be obtained from any of the numerous temples on the hillsides. The population is estimated at about one million. The exhibitions which I am about to describe were held in three temples. The first one I visited is called Kenninji. It is hardly one mile from Nakamuraiya-Juitei's Hotel, which is conducted on the European principle. The rate of charge is four dollars per day without wine, so it is rather expensive; but I only paid three dollars, as I am a regular customer of Juitei at Osaka.

Arriving at the Exhibition we purchased for one dollar three passes. To those who have been to the South Kensington Museum it will not be difficult to realise the interior of most of the rooms at each of the Kioto Exhibitions. The "curio" stands proper might have been taken from the Soulgas collection. The same medley of warlike, ecclesiastical, and domestic relics of mediæval times are to be found here as in their prototype in London. Owing to the absence of descriptions in European languages, more noticeable among the curios (which to the ordinary sight-seer are more wanted than even in the other departments), I was obliged to adopt the only course open to me, of asking for information respecting such articles which from their beauty or singularity attracted my notice. The collection would appear to a stranger to be rich in native and Chinese gold and copper coins, silver being less numerous. One of the huge oval gold coins yeleft "ooban," was pointed out to me as having been presented by the Shogun Hide-yoshi, who flourished some three hundred years ago, to the priests of the Great Osaka Pagoda Temple, called Tenōji. In those days the "ooban" stood for ten rios; now it is worth a hundred, and rarely to be met with. I noticed that they were all in small and shallow cases, with loose glass lids, and, if safe in Japan, they certainly would not be so for half an hour in England at any exhibition of the same kind. Near the coins is an arrow-head of iron, stated to be a thousand years old. Here, too, are several of the curious bell-like "ye-ki-de," both of bronze and of iron. These were given by the Emperors to their envoys when sent on business of great importance, seemingly having the same use as signet rings occasionally had with us in the middle ages. Near these last were the iron seals of a great Chinese warrior, and a small statuette of the hero himself. Musical instruments in great variety, including the "sho," not unlike a piccolo, the harp-like sounding koto, drums, and flutes in great numbers. One

group of Chinese musical instruments is said to have been made during the Ming dynasty. One of a number of gongs is credited with eight hundred years' existence. From either this or one of its fellows can be produced by far the richest bass notes that ever I heard from any such an instrument. After a cup of the delicious Uji tea, I paid a visit to the bird room. A pair of peacocks attracted my attention—the price asked was eighty-five dollars. Among the varieties here are a pair of acho birds, about the size of blackbirds, but canary-coloured, except a few feathers on the head and wings, which are black. They are valued at sixty-five dollars the pair. But the birds of the collection are a pair called by the Japanese Kin-Kamo, blackbirds, rather larger than the acho, with orange bills and a bright yellow patch on each side of the head. These birds seem to repeat all that is whistled, and a good deal even of what is said to them. In the tea room are on sale sample packets of tea, from twenty-five cents each; tea caddies at a rio each; painted and carved figures made of the wood of the tea tree, thirty-five and fifty cents each; and, most curious, perhaps, of all, pots of tea flower-buds, preserved in sugar, five cents each. There are also to be had the tea-powder biscuits. In a large wooden box are three tea shrubs; one, which is about 12 inches high by 12 inches in diameter, bears the following inscription, "Tea tree old for 7 Jears." There are also other two trees with the same mistake, which is the fault of the careless translator. Three aquaria were also there, but were all unfinished. A large water lizard, which was intended for one of them, was placed in a large tub, and around him the unconscious minnows, which are destined for his tiffin.

The adjoining room contains a collection of foreign and native drugs and medicines, half-decayed tiger bones, coiled and dried snakes, cockroaches, newts, &c. Another place, not unlike a decent lumber-room, is filled with an extensive collection of seeds of all sorts, sizes, and colours; dingy screens, only one or two of which, in the absence of all knowledge of their history, appear of interest. Last of all, in a kind of outer gallery, is a small and anything but remarkable collection of plants in pots. One was like something of the Currant tribe, a tolerably good Polyanthus, some Primulas, and a pretty and rather uncommon-looking red-flaked white Camellia. A basket of earth attracted my attention, and on inquiry I was told that it is a peculiar kind of mould much prized by the native florists.

On the following morning I visited Chioin, by far the most picturesquely-situated of all the three Exhibition Temples, and, on the whole, I think the most interesting. The Exhibition is held in what, so far as I could see, is the uppermost of the many buildings which constitute the Temple of Chioin. A long and winding flight of stone steps leads from just below the main entrance of Juitei's Hotel, which latter was formerly one of the priestly residences. It is situated in the temple grounds, on the right of the Chioin exhibition building. On two sides of the Exhibition are two pretty lakes with rocky islands and overhanging trees and shrubs, which grow in the wildest luxuriance. Upon entering the Exhibition, the first conspicuous objects were some very wide rolls of thick waxed or oiled paper. The widest of these were probably 15 feet in breadth. Most of the material was plain and of a yellowish-white colour, but some were embellished with coloured scrollwork, and other rolls were faintly embossed. Passing this I entered what might well pass for the museum of some Japanese inspector of weights and measures. Here were scales, steelyards, and dry and wet measures of all sizes, ages, and descriptions. Some worm-eaten and time-worn square wooden grain measures bore dates which left the Houganji candle quite in the shade. Here are some verbatim specimens of the English inscriptions affixed to them:—

13th year of An'no,	304 years ago.
16th year of Eisobo,	354 "
2nd year of Kenmū,	539 "

A pretty decent old age for a quartern measure! Near these, two gourds, with iron frames and handles, are inscribed, "Used by Taiho." Two more gourds were marked "Great Calabash." Near here are a lot of skins, but none remarkable in any degree. A quantity of natural history specimens, as skulls of tigers, bill of ken fish, three-footed frogs, &c.; but curio of curios—"Tochin kaso"—this was marked in English, "This insect will change to grass when the summer comes." It did not look to me as if it would change to anything more wonderful than dust, but no doubt the translator knows best. From these we next encountered a lot of dye stuffs, drugs, &c

One monster is labelled "Uttkou of Corea," and was, I am told, brought from thence in Japanese craft, showing, if true, that the country is opened to the Japanese, at any rate; and finally a lot of desiccated native delicacies—sea slugs, seaweeds, and Mushrooms.

Retracing my steps I proceeded to inspect the toilette department. Here are tooth powders, face powders, carnation and green bronze-lined bowls for lip-tinting, hair pins in silver and gold, some coral-mounted and others gold-set; combs in ivory, tortoiseshell, &c.—a beautiful tortoiseshell bowl about a 6 inches by 4, attracted my notice;—hair ties, wigs, chignons (for the Japanese all wear chignons, or, at least, ninety-nine out of a hundred women), silk sewing threads, braids and cords of all breadths, colours, patterns, and sizes. Near these are a number of musters of raw silk, the choicest being under glass—one very coarse sample of dirty yellow ochre-colour is labelled "raw silk of Corea;"—a card of silkworm's eggs in a glass case, in which some of the "seed" has hatched. Leaving these I entered upon the final room of the silk department. Here are scores of rich robes of bygone priests and princes, all heavy with gold embroidery. The walls are hung with ancient tapestry of many a wonderful design, but as there was no account attached to them I cannot give you further particulars. Here was a black gauze head-dress labelled, "a crown worn by Taiko." A beautiful fan, its gold and colours as fresh as if painted but yesterday, is stated to have belonged to a former Empress. Patterns of silk concluded the Exhibition, and they were of great variety.

I have given you a short account of the contents of the first series of exhibitions attempted by the Japanese, and I must on the whole congratulate them upon their success. I am informed that they intend to attempt one in Yedo next year, which will, no doubt, be well attended by the foreign community. You will, I think, agree with me that I am now living in a country the most remarkable, and with a people the most surprising, in the known world.—J. TASKER FOSTER.

FLOWERS FOR OUR BORDERS.—No. 9.

TROPEOLUM SPECIOSUM.—SHOWY INDIAN-CRESS.

THE genus *Tropæolum* bids fair to become in time one of considerable extent, for not a year now elapses in which several additions are not made to it. The curious structure of their showy flowers, and the freeness with which they are produced by most of the species, have rendered them general favourites; and from their extensive range throughout South America, where they are found from Venezuela to the most southern part of Chili, generally at a considerable distance above the level of the sea, species may be selected suited to every class of cultivators, from those whose means enable them to indulge their plants with an artificial climate, to that more numerous section restricted to the cultivation of hardy plants.

The *Tropæolum speciosum* is a perennial plant, and well adapted for cultivation in the open border during the summer months; whether it is in the fullest sense of the word hardy we are not yet in a condition to state, but there can be no doubt that it will bear our mild winters.

The roots are not tuberous, as in the case of *T. tricolor* and some others, but fibrous, like those of *Lobbianum* and *crenati-florum*. When planted in the open ground a border by a west wall will be found the most suitable situation for it; if on a south wall it should be partially shaded, as the plant does not well bear full exposure to sunshine; it flourishes most in a compost of turfy loam, peat, and sand roughly mixed, but will do very well in any good garden soil where these ingredients are not easily attainable. It is not advisable to plant it in a rich manured border, as this would result in the production of foliage at the expense of the flowers.

When the plant is grown in a pot, or preserved in one through the cold season, the stems usually make their appearance about February or March, according to the temperature at which it has been kept; but if allowed to remain in the borders during winter, and covered with a hand-light, over which a thick matting should be thrown in severe weather, they will begin to grow in April, and as long as there is any danger of frost the hand-light must be allowed to remain. In May, however, all covering may be removed, and with the genial temperature common to this month the plant will make rapid progress, and speedily reach the height of 5 or 6 feet.

As it is a climber, some provision must, of course, be made for supporting its feeble stems; and for this purpose we

know of nothing more suitable than a flat wire trellis, or one composed of narrow splines placed diagonally across each other, the side pieces being of something rather more substantial. The lower ends of the two upright pieces should be well charred, which will retard their decay when thrust into the ground, and if to this precaution we add that of well painting the whole of the trellis, it will then last for years. If the trellis is of wire, it should be kept from immediate contact with the wall to allow the stems to intertwine freely. The plant forms an elegant object trained against a verandah, and a striking effect may be produced by associating with it young plants of the annual *T. aduncum*, also called *canariense* or *peregrinum*, with which we anticipate it will hybridise. The small wire globes and trellises may be employed for specimens grown in pots, but they are quite unsuited to the plant when cultivated in the open borders, where it attains a much larger size.



Tropæolum speciosum.

The bright carmine-tinted flowers appear in June, and are produced in succession for at least two months. The plant ripens its fruit very freely, and from the seeds thus obtained it may be readily increased, as well as by dividing the roots in spring.

We know of few summer-flowering plants that more deserve the little care requisite for its management.

We may remark, incidentally, that many of the species of *Tropæolum* are hardier than is commonly supposed; the *T. tricolor*, in particular, flourishes in the open air in summer—that is, when planted as we have recommended this species to be, rather deeply in the open ground, and well protected from frost and damp in winter by a heap of dry ashes, over which a hand-glass or large flower pot is placed. It will then grow prodigiously in the summer months, so as to be scarcely recognisable by those who have been accustomed to see it only in pots.—(W. THOMPSON'S *English Flower Garden*.)

SWEET-SCENTED TULIP.—I last week had the pleasure of inspecting at Laurel Bank, the picturesque villa residence of A. Stirling, Esq., Galashiels, an unnamed sweet-scented Tulip, the like of which I do not recollect having met with before. Tulips usually are void of any pleasing odour. None that I am acquainted with merits being classed with sweet-scented flowers. This at Laurel Bank is equal in fragrance to the finest-scented Rose. Mrs. Stirling, who is a great lover of flowers, and a good judge of them as well, told me she preferred it for the delicious perfume which it emitted, as a cut flower in the rooms, before any Rose. It is growing in an outside border in rather a shaded position, where it was placed some years ago. In form the bloom is semi-double; in colour

an orange ground prettily striped with chocolate. It would be much appreciated in our conservatories and room vases, or wherever odoriferous flowers are in demand.—J. M. C.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

ODONTOGLOSSUM VEXILLARIUM. *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Native of New Grenada. We recently published a portrait of the flowers of this grand Orchid. "The plant was overlooked by Warszewicz, discovered by the late lamented Bowman on the western slope of the Andes of New Grenada, and sent home alive, but in a dying state, first by Mr. Wallis when collecting for Mr. Linden, and secondly by Mr. Roezl, also dead, and lastly by Mr. Henry Chesterton, whose plants flowered with Messrs. Veitch."—(*Bot. Mag.*, t. 6037.)

LÆLIA JONGHIANA. *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Native of Brazil. Flowers bright crimson purple, the lips white, yellow, and crimson. "According to Professor Reichenbach this very distinct and beautiful plant was discovered by M. Libon, an ill-fated young traveller, who fell a victim to his zeal in the Brazils, and after whom the pretty genus Libonia was named; and the introduction is due to Mr. de Jonghe of Brussels, an eminent cultivator, after whom it was named in accordance with M. Libon's wishes. The specimen here figured was communicated by Messrs. Veitch, with whom it flowered in March of the present year."—(*Ibid* t. 6038.)

BEGONIA HERBACEA. *Nat. ord.*, Begoniaceæ. *Linn.*, Monœcia Polyandria.—Flowers white. "This singular species of Begonia belongs to a small and very little known Brazilian section of the genus, of which there are three supposed species, all very imperfectly described. They differ from their congeners in the monœcious inflorescence, on which the male flowers are raised on long scapes, and the females are sessile in the axils of the leaves. The species here figured is a native of Rio de Janeiro."—(*Ibid* t. 6039.)

GREYIA SUTHERLANDI. *Nat. ord.*, Sapindaceæ. *Linn.*, Decandria Monogynia.—Native of Natal. Flowers scarlet. "This singular and beautiful plant, which was raised by Dr. Moore from seed introduced into the Glasnevin Gardens about the year 1859, has been so extensively distributed both by himself and from Kew, that it is now one of the commonest plants in European Botanic Gardens. Singularly enough, though growing very freely and even luxuriantly in our greenhouses, it had never flowered in Europe, except (I believe) in the south of France, till March of the present year, when a small plant in a 6-inch pot, in the Chelsea Botanic Gardens, having been starved for the purpose, threw off all its leaves, and put forth instead a raceme of coral-like buds, which the curator, Mr. Thomas Moore, was good enough to communicate to me for figuring in the "Botanical Magazine." This, though much inferior as to its inflorescence to the wild specimens (which bear upwards of one hundred flowers in racemes 2 to 3 inches in diameter) is so characteristic, that I gladly take the opportunity of figuring it.

"*Greyia Sutherlandi* forms a small tree at Port Natal, described by its discoverer, Dr. Sutherland, the Surveyor-General of the colony and an ardent naturalist, as growing in clefts of much-exposed headlands, at elevations of 2000 to 6000 feet, in the Drakenburg mountains, and flowering in August and September (early spring). It was named after Sir George Grey, K.C.B., Governor-General of the Cape Colony at the time of its discovery."—(*Ibid* t. 6040.)

LINARIA HETEROPHYLLA. *Nat. ord.*, Scrophulariaceæ. *Linn.*, Didymia Angiospermia.—Flowers white with yellow blotch. "L. pallidiflora was raised from seed brought by Mr. Maw and myself from Morocco in 1871, and flowered in July of the following year. It is a native of Sicily and Cyprus, but was discovered by Desfontaines in North Africa, and described and figured by him as *L. heterophylla* in 1798. Willdenow in 1800, referring all *Linarias* to *Antirrhinum*, in which there was already an *A. heterophyllum*, altered the trivial name to *aparinoides*; lastly, Chavin, in 1833, restored the plant to *Linaria*, but carelessly adopted Willdenow's trivial name, in which he has been followed by subsequent authors. The *L. tingitana* of Bossier and Heldreich is a more robust variety, with broader leaves, which has been gathered by Mr. Ball and myself at Cape Sparte. The Mount Atlas specimens are much more slender than those found nearer the coast. The *L. viscosa*, *Dum.*, of Spain, is probably another form."—(*Ibid* t., 6041.)

CAMELLIA—Princess Mary.—"In April, 1866, this very fine variety of *Camellia japonica* was exhibited by Mr. Salter, of Hammersmith, at a meeting of the Royal Horticultural Society's Floral Committee, and was awarded a first-class certificate. On the retirement of Mr. Salter the plant came into the hands of Mr. Bull, of Chelsea. The plant is, we believe, of English origin, and is remarkable for its bold and rich deep green foliage—a feature which adds very greatly to the value, as decorative evergreen shrubs, of these varieties which possess it. The flowers are of full average size, and furnished with broad, smooth, stout petals, arranged with remarkable symmetry, and of a bright crimson-red colour. It is a variety in every way worthy of the most extended cultivation."—(*Florist and Pomologist*, 3 s., vi., 121.)

PEACH—Princess of Wales.—"Our figure of this noble late Peach was prepared from specimens kindly transmitted by the Rev. W. F. Radclyffe. It is one of the novelties for which we are indebted to the successful efforts of Mr. Thomas Rivers, of Sawbridgeworth, who raised it from Pavie de Pomponne. Mr. Radclyffe remarks concerning it:—"Its season here, at Okeford Ritzpaine, is from about the 12th to the 24th of October. The specimens sent had not arrived at their full size, which is about from 9 inches to 10 inches, as, owing to the mischief done by insects, I could not let them stay longer. The skin is cream-coloured, and the cheek towards the sun is either bluish or mottled like those sent. The flesh is melting for so late a season, and not woolly; it is of good flavour, and the flesh is very red for some depth round the stone. Though raised from a clingstone, its flesh separates freely from the stone. The trees here, three in number, are very hardy and robust. It sets its flowers better than most sorts. Its flowers are very large and lovely. The glands are round."

"Our note of the fruit sent runs thus:—"Fruit above medium size, straw-coloured, with a greenish tint on the shaded side, flushed with red where exposed, and there marked with irregular spots and blotches of deeper purplish red. Flesh pale yellow, deeply tinted with red round the stone, which parts freely. Dr. Hogg describes it as very large and terminated by a nipple; the flesh melting, juicy, and very richly flavoured. Very large; one of the largest Peaches known, and one of the most beautiful, its colour cream, with a rosy cheek; melting, rich, and excellent; ripens just before Desse Tardive, and is very valuable. Flowers very large and beautiful."—(*Ibid*.)

GARDENING IN THE WEST.

1.—BATH.

THE origin of the term "Go to Bath" is, we believe, involved in obscurity, and we are not aware that even the pages of our curious contemporary "Notes and Queries" have ever been enlivened by a discussion on the subject. It is generally employed in a denunciatory sense to those who vainly attempt to impose on the credulity of others who consider they know better; but how it originated has never been satisfactorily explained. Probably—and we merely throw it out as a hint to those learned in antiquarian lore—it may have been used to King Bladud when he related the circumstance of the pigs rushing into "the oozy bed," and being cured of their disorder. Whatever force or meaning the expression may now have, it was good advice proffered to the Council of the Royal Horticultural Society when they were told this year to "go to Bath."

This western city has for centuries been a centre of attraction. Here fashion has reigned and horticulture has flourished. Its name has served as an adjunct to some of the commonest and most valued of our commercial and domestic products. Who has not heard of Bath buns and Bath bricks, Bath post and Bath polonies, Bath cheese and Bath chaps? Some of these, however, are only specialties in name, for the buns, the post, and the polonies are now to be had elsewhere; the bricks always did come from Bridgewater, and the chaps are chiefly manufactured at Calne. But Bath horticulture, like its waters, is especially cherished by its people. Though there are no large gardens in or near the city, its inhabitants are a race of gardeners. From the earliest times there have been florists' and horticultural societies in Bath. Bath Pinks and Picotees have formed the subject of discussion at many a club, where the members in long coats and bush wigs assembled round the punch-bowl, relating their experiences while they whiffed their yard of "Broseley." But here, as elsewhere, the modern horticultural society has supplanted the florists' club, and for many years Bath has had one of the most important horti-

cultural societies in England, and its shows can boast of productions as meritorious as are to be found at some where greater pretension is made. Perhaps there is no place in England of its size where flowers are so extensively grown, and where vegetables are produced in greater excellence; and although the gardens about the city are small and the nurseries limited in extent, there is no lack of the true gardening spirit among the inhabitants. The Victoria Park, where the Exhibition of the Royal Horticultural Society is to be held on the 24th of this month, is an evidence of the public taste in this way.

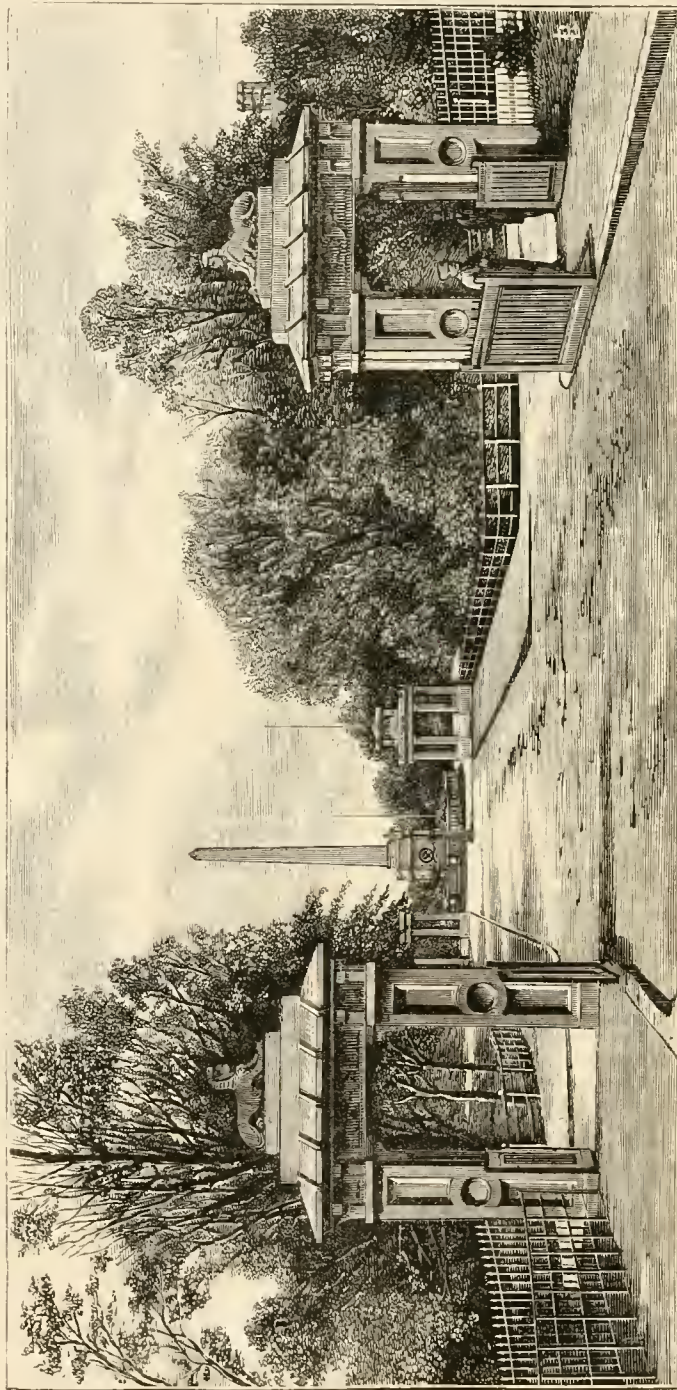
The Royal Victoria Park, of which we gave a plan at page 388 of our present volume, occupies twenty-one acres, and was laid out in 1830, when 25,000 trees were used in planting it. The architect was Mr. Edward Davis, who at the time, and for some years afterwards, took a prominent lead in the advancement of the horticulture of Bath.

The principal approach to the Victoria Park is from Queen's Square, from which there is a triplet entrance, the centre being a wide carriage way, and the two sides narrow gates for pedestrians, the two latter surmounted each by a cast figure of the British lion gambolling with a cannon ball as kittens gambol with a ball of worsted. The ample drive, which is called the Royal Avenue, ascends a pretty steep incline, and winds in a bold curve to the left, where it is flanked on either side by a handsome avenue of trees, which stretches throughout its whole length through the park. The left side of this avenue, extending as far as the obelisk, is of various species and varieties of Elms, and the right entirely of Horse Chestnuts, which on the occasion of our visit were in full bloom.

No sooner had we entered upon this avenue than we saw an index to the Bathonian mind, to which we strongly request the attention of Borough Boards and other heads of departments. Every tree in this avenue of Elms is marked with a conspicuous and distinctly written label, with the botanical and English names; and those who wish for enlightenment on the difficult nomenclature of the many forms of the native Elms will here find a ready and reliable help. These trees were planted about forty years ago, when study of permanent ornament held the place which is now given to temporary decoration, and before bedding-out occupied so much of the gardening taste of the country. But here the Bathonian judgment is displayed in fostering both tastes; for though attention is still paid to the arboricultural specialty of the park, seasonable decoration is not neglected. This is as it ought to be. This is indeed true gardening. All one thing or all another thing indicates poverty of taste and poverty of genius. Horticulture is a various and versatile art, and he who fails or

refuses to cultivate more than one branch of it is like a man of one idea. The Victoria Park of Bath furnishes evidence that the Bath people possess considerably more than one idea, and can appreciate with varied tastes objects which are worthy of all admiration.

But to return to the avenue. We found among the Elms



ENTRANCE TO VICTORIA PARK, BATH.

full-grown specimens of many varieties which it would be difficult now to find, or at least to identify. The nomenclature of these has been carefully preserved, and we commend the study of them to those of the forthcoming visitors to the Royal Horticultural Society's meeting who are interested in arboriculture. Some of the specimens we remarked more particularly were

Ulmus montana glabra, *U. m. vulgaris*, *U. m. rugosa*, *U. m. nigra*, *U. campestris*, *U. c. saruiensis*, *U. c. concavifolia*, *U. c. cornubiensis* or *stricta*, and one called *U. glabra major*, or the Canterbury Elm, which appeared to us to be a variety of *montana*, a noble fast-growing tree.

At a distance of 500 yards or thereabouts from the entrance we come to another gateway, which has a small arch on either side spanning the footpaths. These are surmounted with sedate-looking sphinxes, as a contrast to the playful lions at the entrance; and about 100 yards farther on we come to a third gateway, which is the entrance proper, and in front of which, just inside the park, is the memorial obelisk shown in our engraving, and which bears on its base a large medallion portrait of Her present Majesty, and the following inscription occupying the three sides:—"The inhabitants and visitors of Bath to the Princess Victoria on the Attainment of her Majority. 24th May, 1837." "Completed October, 1837, in the first year of the reign of Queen Victoria. Vivat Regina." "VICTORIA." "Her Majesty Queen Victoria, married to His Royal Highness Prince Albert of Saxe Coburg and Gotha, February 10th, 1840."

Beyond the obelisk the trees in the avenue become more varied. Though still consisting mainly of Horse Chestnuts and Elms, we see here and there the decided tone of the Purple Beech asserting itself, the light foliage of the Ailantus, the golden tassels of the Laburnum, and the gorgeous splendour of the single and double scarlet Thorns, here and there varied with the double white. Just beyond the obelisk on the right is a group of Hollies, and a little beyond are groups of large Yews kept in a somewhat pyramidal form interspersed with Evergreen Oaks, Laurustinus, and Portugal Laurels. A little farther on there is a pond on the right with waterfowl, and on its banks some venerable Weeping Willows. As we approach the part where Park Lane unites with Weston Road we come to a pretty undulating corner, nicely varied with mounds, glades, and serpentine walks. This appears to have been formed by considerable excavations of soil or stone, and the effect produced has been a great gain to the park. Mr. Ayrton might do worse than take a hint from this for the improvement of Kensington Gardens and Hyde Park. With the views of economy held by the present Government, we recommend Mr. Ayrton to dig for gravel in the public parks, and instead of offering these excavations as a "free shoot" for enterprising builders to deposit their superfluous rubbish, let him entrust them to Mr. Gibson or the other superintendents to deal with them in such a way as to contribute towards the embellishment of the parks by breaking the monotony of the surface, which is so characteristic of the parks on the north side of the Thames, and thereby introduce landscape effects. These dells are planted with great taste, and contain many excellent specimens of Conifers and other evergreens, all of which are carefully and correctly named. And just by way of finish there is a great Jack-in-the-green with his head surmounting an Ivy bush; but whether the head represents that of King Bladud, Jupiter Tonans, or the first mayor we cannot tell by the portrait.

The preparations for the meeting of the Royal Horticultural Society in the Park have made good progress. The framework of the Exhibition tent has been for some time completed, and the turf banks on which the plants are to be staged are already firm and well clad with verdure. The day on which we visited the spot we were pleased to see a man mowing the surface; and this is a great improvement on what we have had to regret on some former occasions, when, during the whole time of the Exhibition, the turf never looked otherwise than uncomfortable. The site of the Exhibition could not have been better chosen; it is commodious and picturesque. The design of the Exhibition ground enclosed in the tent is admirable; and if the weather favour the Society, we prognosticate one of the best and most successful meetings the Society has ever held will be that which opens at Bath on the 24th of this month.

NOTES AND GLEANINGS.

MR. GEORGE, the skilful gardener at Rood Ashton, in Wilts, informs us that he can keep the WASPS from every Grape in the houses, except Madresfield Court, and that he cannot save from their ravages. They fairly beat him in the struggle.

IF THE MEETING OF THE ROYAL HORTICULTURAL SOCIETY AT BATH is not a success it will not be the fault of the Local Committee; for every town, village, and railway station in the west is placarded with bills of attractive dimensions and colours, enough to excite the population of the whole country.

— WE understand that at the forthcoming Exhibition of the Royal Horticultural Society at Bath, the Mayor of that city (Mr. Alderman Blaine) will give a grand banquet, after the inaugural ceremony, to the Council of the Society and its officers.

— IT is reported that HEMP, when the blossoms are just opened, is an infallible preservative of textile fabrics against the attacks of moths. The stalk, with leaves and flowers, is cut when blooming (about July), and dried in the shade. It is said to preserve its properties for several years.—(*English Mechanic*.)

— DR. J. E. GRAY says that the Wild Birds' Protection Act is having an effect contrary to what was intended. The fruit-growers of Kent and other parts, it appears, employ boys to go about destroying the eggs in the nests of all kinds of birds indiscriminately. Insect-eating birds, especially starlings, are the victims of this system, as well as those that really do a "balance" of harm.—(*English Mechanic*.)

— DR. A. KERNER reprints from the Proceedings of the Scientific Society of Innsbruck an interesting paper on the means of PROTECTION OF THE POLLEN OF PLANTS against premature displacement or damp. As the vitality of pollen is immediately destroyed by exposure to the action of either rain or dew, he finds in nature a variety of contrivances to protect it against these injurious influences during the interval between its escape from the anther and its being carried away by insects, these contrivances being generally absent in those plants where fertilisation is affected by the pollen being conveyed at once to the stigma by the wind. In plants with coherent pollen, fertilised by insect agency, where some of the anthers are so placed as to be necessarily exposed to the weather, these are generally found to be barren, or destitute of pollen, and where they would interfere with the entrance of insects into the flower, they are altogether abortive or rudimentary. Plants with coherent pollen, which require insect agency for their fertilisation, Dr. Kerner believes to be of more recent geological occurrence than those with powdery pollen, which require only the wind to convey it to the stigma.—(*Nature*.)

NEW BOOK.

The Distribution of Rain over the British Isles during 1872.

By G. J. SIMONS, F.M.S., &c. London: E. Stanford.

THE name of the author of this little volume is a guarantee of its accuracy, and we commend it to our readers, not merely because it contains the observations recorded at 1700 stations during last year, but because it contains also full directions for securing accurate results by those who keep registers of the rainfall. One extract will indicate the nature of the work's principal contents.

Mean Ratio of Rainfall during the six years 1860-65 to that of the ten years 1860-69 (taken as 100) for England, Scotland, and Ireland, and for the whole of the British Isles.

England	97.9	Ireland	98.6
Scotland	99.8	British Isles	98.8

"These results are remarkably accordant, for it will be found that out of seventy-four stations,

16 do not differ more than 1 per cent.

30 " " " 2 "

44 " " " 3 "

54 " " " 4 "

58 " " " 5 "

69 " " " 6 "

73 " " " 7 "

and only 1 differs by more than 7 "

—viz., Cromarty Lighthouse, at which the fall during the six years, 1860-65, was 7.2 per cent. above that during the ten years, 1860-69.

"Moreover, it will be found that there is a general agreement between adjacent stations, which testifies to the accuracy of the observations upon which this table is based. The widest differences are in the north midland counties, and are, perhaps, due to the remarkably heavy local rains which have occurred at isolated stations several times during the last few years, or there may have been some alteration in the position of one of the gauges. Raising or lowering the orifice of any of the gauges 2 or 3 feet would produce quite as great a discordance as is here noticed; which, by-the-by, incidentally shows how carefully the observations must be taken to render such a change the most glaring feature in the inquiry."

SHAPE YOUR TREES FOR THE WIND.

WHILE few objects in the landscape are more beautiful to the eye than a fine-formed evergreen or ornamental tree, so none is more offensive to the true horticulturist and lover of

the beautiful in nature than an unsightly, neglected, and misshaped tree of any-kind.

In and around San Francisco, and in many of our valleys and slopes, we are subject to strong periodical winds, which in the spring and growing season, when the tree is heavy with foliage, bends or careens the tree in one direction for a period of time long enough to cause it to grow in that direction, for "just as the twig is bent the tree's inclined" is fully verified, as all "who have eyes to see" can see if they will but observe as they travel over our State.

We will now point out briefly a sure remedy for trees exposed to strong or sweeping winds, as the leaves of the tree are its lungs by which life is sustained. It will be noticed that trees bent over to a certain angle are bereft of their leaves on the windward side, because the winds have a double force and sweep them off on that side, while the opposite side of the trees are full and the limbs grow larger, thus adding to their weight, and this careens the tree over, causing it to grow into a misshaped tree.

The remedy for this evil is easy. Prune the tree severely on the leeward side, leaving double the quantity of branches on the windward, and leaving them thick; these meet the force of the winds and resist them, while the opposite side of the tree, being shorn of weight, prevents the tree from careening over, and yet with less than half the branches on the opposite of the tree it will grow faster and come up to a good form, and make a handsome tree, healthful, and pleasant to look upon. What we say of an ornamental tree of any kind will apply equally to fruit trees.—(*Californian Farmer*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHENEVER it is necessary to water do so copiously, as a slight sprinkling is worse than useless. Whenever the weather is suitable for destroying weeds the hoe should be constantly plied between all growing crops, both for the purpose of destroying the weeds and retaining moisture. To maintain the strength of *Asparagus* next year, no more of the produce should be cut. Late and close cutting is, without doubt, one of the principal causes of weak "grass." The plants of *Cauliflowers* which are now forming their heads should be watered and mulched with short litter, this will cause them to be close and compact. The advantage in planting in *Celery* trenches as we formerly recommended, will now be apparent where adopted from the superiority over the plants on the level ground. Continue to plant successional crops of *Celery* in trenches; take up the plants with as much earth around the roots as possible, and by no means shorten any of the leaves. Immediately after planting give them a good soaking with water. The earlier crops should have the earth loosened about their roots, as the frequent watering it requires hardens the surface and prevents its receiving the benefit it should do from future waterings. To produce fine *Cucumbers* the linings of the frames should still be kept-up, they should also be covered with mats at night, as it is sometimes very cold. After the plants have been bearing for some time and the shoots get a little irregular, cut them back, give them a good watering, and add 2 or 3 inches of fresh soil. After this keep the plants nearly without air for a few days, shading them when the sun is very powerful. Sprinkle the plants with tepid water early every fine afternoon. With this treatment they will make fresh shoots, and will be found more productive than before. Make a sowing of the main autumn crop of *Endive*. Plant-out a few of the early sowing. Keep them watered till they get roothold. Some of the *Herbs* will shortly be fit to cut for drying. The best time for doing so is just as they are coming into flower. Keep a quantity of *Lettuce* tied-up for blanching. Make another sowing in drills where they are to remain. There is a much greater difficulty in producing *Mushrooms* at this season than at any other, unless in a house constructed for the purpose. It is necessary to keep the temperature of the house down to 60°; to do this water should be frequently poured down so as to produce cold by evaporation. Earth-up the main crop of *Potatoes* immediately after rain. Keep the ground between the rows loose. Sow a few rows of *Spinach* for succession; if the weather continue dry, water the drills before sowing and again after covering them.

FRUIT GARDEN.

Wall trees demand attention in pruning and nailing. The very gross-growing shoots may be stopped to cause them to throw out laterals. If there are any large shoots to remove, this is the best time to remove them. Keep all the newly-planted fruit trees watered and mulched, and if dry weather continue all wall trees would be benefited by a thorough watering. It will be necessary if the weather continue dry to water Strawberries copiously, afterwards lay straw or short grass between the rows, to preserve the fruit from dirt and to retain moisture. Layer the

early runners in pots for forcing. Net Cherry trees and Strawberries to preserve them from birds. Remove all suckers from Filberts as they appear, examine the young fruit, and look after caterpillars, as they are making sad havoc in some places. Shorten and remove the summer wood of Gooseberries and Currants in the manner recommended for fruit trees. Give the fruit of Peach and Apricot trees their final thinning; nail the young shoots close to the wall, leaving no more than can be fully exposed to light, recollecting that now and not next spring is the period for removing all superabundant shoots.

FLOWER GARDEN.

I would wish to call the attention of your readers to two or three important points relating to the flower garden which are sometimes wholly neglected, or at others very inefficiently attended to. In the first place I wish to see the thinning of hardy annuals more generally adopted; one of the chief causes of their remaining so short a time in flower may be traced to their being so thick that it is quite impossible for them to branch out, and, consequently, they only have a flower or two at the end of each spindling stem. From three to half a dozen plants in each patch are quite sufficient to leave. Another point to which I would call attention is, the thinning of the flower stems of herbaceous plants. This is but very rarely done, but is not the less necessary to insure good flowers. Staking is another operation in which there is not sufficient care taken. The numerous flower stems of herbaceous plants, and the mode of tying them up, give them the resemblance of a green faggot set on end, rather than of a living plant. Half-hardy plants, such as Verbenas, &c., should also be pegged down as much as possible with their heads to the north, which will cause them to be drawn upright by the sun more effectually than if they were pegged down at random. Insects and caterpillars are becoming very numerous, therefore keep a sharp look-out to frustrate their attempts at colonisation. As soon as the leaves of seedling Tulips become withered take up the bulbs. Great care must be observed not to injure them, as in most cases they push a bulb down several inches into the ground. Let them dry gradually in the shade. The bulbs of *Ranunculuses* should be frequently examined, as the green caterpillar, scarcely distinguishable from the stalk, often lodges just beneath them; they are also much infested with the cuckoo spit (*Tettigonia spumaria*), both of which are seriously detrimental to the blooms. Where the flowers are sufficiently advanced a light awning may be put over them. Still persevere in the extermination of the green fly on Carnations, either by brushing off or using Scotch snuff, puffing on the buds by means of a small indiarubber bottle with a tube in the neck. Take off laterals as they appear, and reduce the stems thrown up by strong-growing seedlings to one, so that the energy of the plant may be directed to the proper formation for blooming. If you examine the heads of Pinks closely you will find some attacked by a small grey grub which eats its way through the lower part of the calyx and devours the inside. Continue to propagate Pansies by slips or cuttings, and all seedlings of an inferior character, or which are not a decided improvement on the varieties already in cultivation, may be pulled up as they appear.

GREENHOUSE AND CONSERVATORY.

While out-of-doors flowers may soon be expected in abundance, nothing should be brought here at present but what is well grown and rooted, nor should any plants be allowed to remain that are at all shabby, for it seems a waste of means, and certainly betrays bad management, to occupy glass houses with plants of an inferior interest to such as may be expected in the open air. It is not desirable, however, to crowd the house with flowering plants; the aim should rather be to have a moderate number of handsome specimens effectively arranged, which will yield more solid interest and pleasure than a greater amount of floral display from plants of no individual merit. A thin arrangement will also be advisable on account of the permanent occupants of the beds or borders, which at this season should be allowed plenty of space in order to secure strong and well-ripened wood, without which they need not be expected to bloom finely. Use every means to keep down insects. Give clear weak manure water to young growing specimens, and repeat any that are intended to have another shift this season, so as to have the pots well filled with roots before winter. Maintain a moist growing temperature, and syringe vigorously any plant at all infested with red spider.

STOVE.

Many of the plants will require potting throughout the summer. Young seedling exotics should be potted as soon as they are sufficiently large. A hotbed would be the best place for them until they make fresh roots, in the absence of which they should be placed in the warmest part of the house and covered with a hand-glass. Encourage backward plants of Orchids with plenty of heat and moisture while it can be done with safety. See that the plants on blocks and in baskets are properly supplied with moisture at the root. To prevent any mistake in this matter carefully examine every plant at least once a-week, and immerse any found to be dry in tepid water until the material about the roots shall have become well soaked. Syringe

lightly morning and evening, and sprinkle floors, &c., in order to keep the atmosphere thoroughly moist.

PITS AND FRAMES.

As I have before observed, the frames for propagation will at this season be better adapted for the purpose if placed facing the north; the bottom heat should be kept up, and the cuttings and young seedling plants duly supplied with moisture.—W. KEANE.

DOINGS OF THE LAST WEEK.

"We have had a week of very favourable weather for all growing crops. A warm shower or two, and a much higher night temperature, have caused luxuriant growth.

KITCHEN GARDEN.

With a free growth of all crops, "ill weeds grow apace." The Dutch hoe has been kept at work wherever they made their appearance.

Peas.—We made another sowing of Champion of England and Vetch's Perfection. This will be the last sowing of such late sorts as Perfection. Our next sowing will be of Eastes' Kentish Invicta, Laxton's Alpha, and Taber's Early Perfection. On our light gravelly soil late-sown Peas seldom do well, being very liable to the attacks of mildew.

We have been cutting very good Cauliflowers from the plants that were put out under the hand-lights in autumn; the succession lot are also looking extremely well; they were planted on deeply-trenched highly-manured soil, and have had no artificial watering. The crops of Carrots and Parsnips have had a final thinning, except in the case of the Early Horn, which is singled out, so that a handful can be pulled when required for the kitchen, and the crop be left sufficiently thick.

The earliest Celery has been planted out in trenches. We prefer a single row in a trench; others who have less spare ground plant it out in beds, three or four rows in each. We have been hoeing and thinning Sea-kale. Our practice is to sow a certain space of ground every year; a large number of the plants come in for forcing with the small plants of the previous year's sowing, which are planted out early in the year, and of course make the strongest plants.

FRUIT AND FORCING HOUSES.

Pine Apples.—Queens are swelling-off in the fruiting house; as soon as the fruit begins to change colour no more water is applied to the roots. As a rule, the fruit is small with us this year, and it seems that other people are no better off than ourselves. Though liberal prizes were offered at the last show at South Kensington, very few growers came forward to claim them, and the fruit exhibited were far from first-rate. When the beds were renewed with fresh tan some time ago the pots were not plunged to more than half their depth, in case the roots should be burned; we shall now, if time can be spared, fill-in the bed with fresh tan up to the rims of the pots.

Vineries.—In the early houses, where the Grapes are ripe or nearly so, there is very little work required. Where the Grapes are quite ripe we keep a cool temperature, but withal a dry atmosphere; it has been necessary all through to guard against mildew. We know the atmospheric conditions that cause it to appear, and so are on our guard; prevention in this case is much better than cure. In the late houses we do not remember ever to have seen such strong growths; the foliage is also stout and healthy, and as the roof is quite covered with it, all after-growths are stopped as soon as they appear. It is necessary to go over the houses about every fifth day, so that the young shoots may be stopped as soon as they begin to grow. All the Grapes will be thinned before this appears in print. There is no trace of red spider in any of the houses; should it appear, it is best to wash the infested leaves with a sponge dipped in water in which soft soap has been dissolved. It is not advisable to paint the pipes with sulphur until the Grapes have arrived at the stoning period, as when they are in an early stage of their growth they are very liable to rust.

Melons ripening in our earliest house have a drier atmosphere, with a brisk heat from the hot-water pipes, and ventilation at the highest part of the house at night. We have an excellent crop of Tomatoes from the back wall; the pots have been removed to an airy cool house to retard the plants until they are required. In the second Melon house there is a good crop of Figs in pots. The Brown Turkey was our favourite at one time, but we find Bourjasotte Grise a better-flavoured and more prolific variety. Gros Verte is also a very dwarf-growing prolific sort of excellent flavour. In a third house a few St. Michael's and Tangerine Oranges are grown in pots; they are some trouble to keep clean, but we get a few dishes of remarkably fine fruit from them about Christmas.

ORCHARD HOUSE.

The Strawberries are ripening, and necessitate much care in syringing the fruit trees. A variety obtained from the Continent named Alexander II., is one of the earliest to ripen, and carries a most abundant crop of even-sized fruit, which is large, cone-shaped, and of a bright crimson colour. President is

our standard sort; it is also coming in. Amateur we will report upon at another time; it is the most subject to mildew of any in our collection.

Peaches, Nectarines, Plums, and Pears have been surface-dressed. Nothing suits them better than the mixture recommended by Mr. Rivers, of Sawbridgeworth—horse droppings picked up from the roads, and an equal quantity of malt or kiln dust added. We use horse droppings one part, malt dust one, and one part of loam. This dressing starts the trees into luxuriant growth; we have sometimes used weak manure water as well, but this is injurious to the trees.

CONSERVATORY AND PLANT STOVE.

In the stove we have been repotting and rebasketing those Orchids that were not done earlier. Nearly all the subjects here are making rapid growth, and require a moist atmosphere with a high temperature. Shutting up early in the afternoon, and allowing the sun to shine on the glass for an hour or so, is better than too much artificial heat at this season of the year. The paths and stages should be well sprinkled with water, and all plants that require it should be syringed before shutting-up. A gentleman who had lived in India came into our stove after the house was shut-up on one occasion, and he exclaimed at once, "This is exactly like Bombay in the rains."

The work here has been similar to that of last week, tying and training climbers, picking decaying flowers and seed-pods from Azaleas, Geraniums, &c., and potting on any plant requiring it. Placing sticks to Liliams and Phloxes in pots. The Liliams succeed well with us; they are grown in cold frames until the growths come in contact with the glass, when the sides of the frame are raised a foot higher on bricks, and by the time the growths have again touched the glass the plants are placed out of doors. We do not find *L. anatum* quite so hardy as the varieties of *lanceolatum*. Tree Carnations have become infested with green fly; we have cleared them off with a camel-hair brush; this is sometimes more convenient than smoking when only a few plants become infested.

FLOWER GARDEN.

Weeds are appearing in the flower borders, and the ground is hard on the surface. We ran the Dutch hoe through all borders and beds, and the weather being favourable, planted out all the more tender bedding plants. Notwithstanding so much congenial weather, the bedding plants are looking very well and making good growth; under favourable auspices the beds will be pretty well covered in ten days. Planted out Asters, Stocks, and other half-hardy annuals. They had been pricked-out in boxes, were well hardened-off, and having been lifted with good balls of earth at the roots, they will grow away at once.—J. DOUGLAS.

TO CORRESPONDENTS.

* * * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

BOOKS (B. Adams).—"The Treasury of Botany," Longman & Co., defines botanical terms. "The Cottage Gardeners' Dictionary" explains many gardening terms.

HORTICULTURAL SHOWS NEAR LONDON (T. W.).—There is one at the Royal Botanic Society's on the 9th of July.

PINK-FLOWERED LABURNUM (W. Green).—We believe from the leaves you enclosed that your tree is *Cytisus purpureus*. It occasionally bears some yellow flowers, as the common Laburnum also sometimes bears purplish or pink flowers. See what we said to a correspondent last week.

ROSE LEAVES BROWN-SPOTTED (E. Rathar).—Yours Roses, as also your grass, suffer from poverty of soil. Carefully scrape the top soil away from their roots without disturbing them, and mulch with good short pig manure. Replacing the soil, give guano water. Syringe the trees in the evening with clear soot water, made by putting fresh soot into a tub of water, stirring well, and using the liquid when it has settled. It must not be used too strong. Water the grass with liquid manure, and sow White Clover and Medicago lupulina, dusting a little fine soil over it. This had better be done in September or March.

GLOXINIA SEEDLINGS (J. V.).—We never saw an unattractive Gloxinia, but we do not think years differ materially from many already in our houses. If you like, you can send pot specimens to the next meeting of the Royal Horticultural Society's Floral Committee.

MOLES DESTROYING GARDEN CROP (A Disheartened Amateur).—We do not know of any mode of destroying them except by trapping, which, however, requires some dexterity, especially in loose-dug ground; for the mole, instead of traversing its old run, is most likely to make a fresh one. In such a case we have sometimes succeeded in catching it by trampling the ground on each side of an important run very firmly, and carefully setting the trap at that place, placing stones or other hard substances at each side of it. Moles often do much mischief ere they can be taken. Probably the Belgian trap recently described might be adopted with advantage in light tillage ground, for which it seems well adapted. The traps in common use, and of

which there are two or three kinds, would seem better suited to firm pasture and, but in all cases skill in the setting is important in securing success.

ROSES IN POTS FOR SPRING BLOOMING (H. N. O.).—The plants should be potted at once into 8-inch pots, kept in cold frames at first till the roots have taken hold of the soil, and then plunged in a sheltered but sunny spot, where they can ripen their wood. Care must be taken that worms do not get into the soil. Water freely, and give liquid manure when the plants are well established. It will do no harm to take a few blooms from the strongest plants, but do not overdo it. Roses in pots require good soil, and crushed bones are very useful for drainage. When in cold pits or frames stand them on ashes.

COCO-NUT FIBRE FOR CUTTINGS (Idem).—It is best mixed with a little light loam and silver sand, though many things root freely in it when it partakes more of the nature of waste than of fibre. All the plants you name strike freely in it, as nearly every softwooded plant does.

TACSONIA VAN-VOLXEMI (Idem).—It is hardly enough in any greenhouse from which frost is excluded. Repot, and establish the plant before planting in a border: it does much better in a border than in a pot. Train on wires close to the glass, and thin-out weak shoots, allowing the leading shoots to ramble at will.

JUDAS TREE (Mrs. C.).—The flowers enclosed seem to be those of the Judas Tree, *Cercis Siliquastrum*. They grow, as you describe, in bunches. The shrub with white flowers you mention, and popularly known as "Syringa," is the *Philadelphus coronarius*, or Mock Orange.

ROSES (J. C. Goff).—The Rose is certainly not *Maréchal Niel*, and we think it is Climbing Devonian, though the petals had fallen so much that it was rather difficult to be quite certain; still the leaf, bud, and petals correspond, as also your description of its growth, with Climbing Devonian. (W. F. R.).—The blooms of *Baronne Louise* Uxkull you sent are certainly promising, the scent good, reminding us much of that good old kind the Duchess of Sutherland, from which we think it is a descendant. It is difficult to judge of the shape by blooms sent without water-tubes. It is somewhat deficient of centre petals and too much incurved, from what we can judge of the specimens sent. It is, however, decidedly, from what we have heard and seen elsewhere, a good variety, and like a deeper-coloured *Abel Grand*, nearly approaching to the colour of *Jules Margottin* or *Marquise de Castellane*.

IMPREGNATING MELON FLOWERS (J. H. B.).—The female flowers have the fruit directly under the flowers, whilst the male flowers are simply like female flowers without the fruit below. Impregnation is effected by taking the male flower when fully expanded by its stalk, and, whilst holding the stalk between the finger and thumb, removing the corolla, then placing the central part so as to touch the centre of the female flower; thus some of the pollen is placed on the stigma of the female. The anther of the male, or the flower denuded of its corolla, may be left in the female flower. This should be repeated on all the flowers, selecting a fine clear day when there are several flowers open, so as to secure simultaneous setting with the requisite number—three or four fruits—to each plant. It is not necessary to impregnate the flowers of *Cucumbers* unless seed be used, then impregnate the flowers in the same way as those of *Melons*. *Cucumbers* require to have more moisture than *Melons*, and the soil should be lighter. *Melons* require a strong loam made firm. When setting, the atmosphere for *Melons* should be dry, also when ripening.

DOUBLE WHITE PELARGONIUMS—WINTERING COLEUS—FUCHSIAS AND PELARGONIUMS FOR MARKET (M.).—We do not know whether you mean double white *Pelargoniums* of the Zonal or Show varieties, but of the show varieties we only know of *Album plenum*; whilst of the double Zonals, *Alice Crousse*, white with salmon centre, and *Aline Sisley* are good. *Coleuses* are best wintered from cuttings struck in July and placed in 6-inch pots by September, and should have a light airy position in a house with a temperature of 45° to 50°, giving no more water than sufficient to keep them fresh. Six *Fuchsias* are *Avalanche* (Smith's), *Blue Boy*, and *Lord Calthorpe*, these have double corollas; *Arabella*, *Sedan*, and *Killiecrankie*. *Golden Tricolor Pelargoniums*—*Mrs. Rutter*, *Reynolds Hole*, *Mrs. Headly*, *Prince of Wales*, *Lady Cullum*, and *Achievement*.

CAMELLIAS AND AZALEAS AFTER FLOWERING (M. Y. L.).—The plants are to be potted if it be required, and placed in a house or pit with a temperature of 55° from fire heat, keeping moist, sprinkling overhead twice daily, and shading from bright sun. Water moderately until the roots are working freely in the fresh soil, then copiously. Admit air moderately, and let the temperature rise to 65° or 70° by day, and 75° or 80° on bright days. After the growth is complete admit air more freely, and when the buds are set give air freely, and place the plants in a cold pit, under a wall, or in any spot where they will be shaded from sun during the middle of the day. We do not remove our *Camellias* from the greenhouse. They have now completed their growth, and are shaded by tiffany. The *Azaleas* are placed in gentle heat to make fresh growth, and when it is completed they are moved to a cold pit, and have abundance of air and light, with shade from powerful sun.

WATERING NEWLY-PLANTED BEDDING PLANTS (Subscriber).—It is not judicious to water newly-put-out bedding plants with liquid manure. The plants are to be slightly watered overhead until they are rooting freely, and then liquid manure much diluted with water in dry weather may be given once or twice a week. It ought to be applied to the bed from the spout of the watering-pot, pouring it between the plants.

PELARGONIUM LEAVES SPOTTED (G. W.).—The leaves sent show that the plants have been syringed and kept close, and without air at night and early in the day. They should not be syringed after March, and should have a little air at night, so as to keep the moisture of the atmosphere from condensing on the leaves. Give air early, leave a little on at night, and discontinue the syringing, and the foliage will be all right if kept free of insects.

CUCUMBER LEAVES SPOTTED (Idem).—It probably arises from the steam escaping from the feed-cistern, which you say you have to heat to boiling point. Why not have a close lid? Your house is sufficiently heated. A more likely cause of the spotted leaves is heavy syringing and the sun shining powerfully on the foliage whilst wet. With brighter weather, so as not to cause the necessity for heating the pipes to so high a temperature, the evil will probably disappear.

TEN-WEEK STOCKS DAMPED-OFF (B. B.).—The seedlings have damped-off at the neck or collar, from their having been kept too close, not being sufficiently near the glass, and standing too near each other. Instead of shading from bright sun, we should have given air, and exposed fully to light as soon as the plants appeared, and with this air and water only to keep the soil moist very few, if any, would have damped-off. They are best watered but little until the plants have a pair of rough leaves, and then should be pricked out

an inch apart in a frame, watering before pricking-out, then give a light watering and keep rather close, sprinkling overhead every morning, and admit air during the early part of the day, shading from bright sun, and closing early in the afternoon. After they are growing freely they cannot have too much air and light, with a gentle watering overhead every morning. They are the better of slight bottom heat. Plant out before they become crowded. Light moderately rich soil is most suitable.

HASTENING ASPARAGUS (W. H.).—There is not, that we know, any speedy mode of securing *Asparagus*, even at the sacrifice of the plants. Two years after planting is the earliest time the plants will produce heads fit to cut, but we have known strong three-year-old plants, planted in June, taken up very carefully, planted without drying the roots, and well watered with liquid manure, afford good heads the following spring.

FORCE PUMP (G. Walsh).—We cannot tell of any special maker, but if you were to show the drawing to any ironmonger he would obtain or make one.

SCOTCH FIR AND SPRUCE BARK FOR BOTTOM HEAT (W. A.).—We do not think it is of any value; Larch and Oak bark, however, is so after it comes from the tannery. It should be laid in a heap to ferment, and when at a good heat be placed in the bed for *Melons* or *Cucumbers* 3 to 4 feet deep. The spent bark is useful as a plunging material.

PLANTS FOR GREENHOUSE (Idem).—You do not say whether you have means to keep out frost. We presume you will have before frost. We should have *Camellias*, *Azaleas*—say half a dozen of each to begin with, *Coronilla glauca*, *Cytisus racemosus*; *Acacias* *armata*, *pulchella*, *platyptera*, and *longifolia* *magnifica*; *Correa* *Brilliant* and *Harrisii*, *Polygala Dalmatiana*, half a dozen *Euphorbias*, and *Fuchsias*, *Pelargoniums*, *Cinerarias*, *Primulas*, and *Calceolarias*, with *Cyclamens*, and bulbs, as *Hyacinths*, *Narcissus*, *Tulips*; *Spiraea japonica*, *Deutzia gracilis*, *Dielytra spectabilis*, and a few Tea-scented *Roses*.

GERANIUMS LOSING THEIR LEAVES (Idem).—The leaves have fallen in consequence of the plants having received a check. Probably they had been kept in or raised in a warm house, and not well hardened-off when you had them, and placing them in a cool house has given them a check; or the evil may have been occasioned by the potting. It would have been better to have kept them in the pots as received, until they had recovered the journey and begun to grow. The compost we hardly approve of, "stick ashes" especially. Turn them out of the pots, remove all the old soil, and place in pots that will hold the roots well, using a compost of light fibrous loam with a fourth of well-rotted manure, and a sixth of sand, placing them in a frame, and keeping them rather close until growing, then admit air freely.

SEEDLING CARNATION (H. S.).—It is inferior to very many.

ASPARAGUS-BED MAKING (W. W.).—Add to your light soil a foot thick of stable or farmyard manure, and 6 inches thick of sea sand, and mix them thoroughly with the soil. If you have any leaf mould or decayed vegetable matter, mix it with the soil. This will increase the depth to 3 feet 6 inches. Instead of planting, sow the seed in two rows at 1 foot apart, then leave a 3-feet space between, and thin-out the plants to 6 inches apart. We find we get *Asparagus* sooner fit to cut this way, and very much better beds than by planting shoots of any age. Supply the plants with liquid manure during growth; they can hardly have too much from June to September.

BEDDING PLANTS AND RABBITS (E. D. B.).—No lime is used with the cow's urine mentioned for sprinkling the plants as a preservative, on page 115 of our thirtieth volume.

CATS TRESPASSING (E. G.).—It would not be legal to destroy them, and you would not escape ridicule if you sued the owners. A gentleman we know caught them in a drop-trap, put the trap into a pond, dug a hole, emptied the contents of the trap into the hole at night, so that the trespasser was never seen, and no owner exasperated.

GRAPES DISEASED (Amateur).—By your description we fancy the berries have been mildewed. This disease has been common in the present season. It is caused by the uncongenial weather. The atmosphere of the house should be kept moderately dry and warm, and the hot-water pipes should be coated with sulphur mixed with water to the consistency of thin paint. If the disease is very severe it will be necessary to throw some flowers of sulphur on the bunches by means of a sulphurator. If the rafters of your house are, say, 16 feet long, and the vines are planted 2 feet 9 inches apart, 20 lbs. of Grapes to each rod will be a good crop.

LAPAGERIA ROSEA FAILING (Idem).—The soil in which it is planted is unsuitable. Plant in turfy peat with good drainage underneath, water freely in the summer months, and syringe freely when the plant is growing.

FRUIT TREES FOR LIGHT SOILS (G. M. U.).—If you can obtain clayey loam you ought to work as much as you can into the soil intended for your fruit trees. Light sandy soils are unsuitable for them. We recommend the following:—*Dessert Apples*.—Court-Pendu-Plat, Cox's Orange Pippin, Early Harvest, Pitmaston Golden Pippin, Kerry Pippin, King of the Pippins, Old Nonpareil, Scarlet Nonpareil, Oslin, Irish Peach Apple, Claygate Pearmain, Mannington's Pearmain, Scarlet Pearmain, Devonshire Quarrenden, Reinette du Canada, Golden Reinette, Reinette Janne Hâtive, Boston Russet, Syke House Russet, and Sturmer Pippin. *Kitchen Apples*.—Bedfordshire Foundling, Blenheim Orange, Cellini, Keswick Codlin, Cox's Pomona, Dumelow's Seedling, Emperor Alexander, Gooseberry Apple, Hawthornden, New Hawthornden, London Pippin, Lord Suffield, Rymer, Tower of Glamis, Waltham Abbey Seedling, and Warner's King. The list of *Pears* we have found to do well on light soils is a small one. We advise the following:—*Deurée* Bosc, *Deurée* d'Arenberg, *Deurée* d'Amanlis, *Deurée* de Rance, *Deurée* Superfin, *Don Chretien*, *Conseiller de la Cour*, *Doyenné du Comice*, *Fondante d'Automne*, *Jargonelle*, *Louise Bonne de Jersey*, *Marie Louise d'Uccle*, *Napoléon*, *Passe Colmar*, and *Zéphirin Grégoire*. *Cherries*.—Bigarreau, Black Eagle, Black Tartarian, Elton, Governor Wood, Knight's Early Black, Archduke, Duchesse de Palluau, and May Duke. We also grow the *Kentish* for an early kitchen Cherry, succeeded by *Morello*, the most useful of all. *Dessert Plums*.—*Angelina* Burdett, *Bryanstone Gage*, *Early Favourite*, *Golden Esperen*, *Guthrie's Late Green*, *Kirke's*, *Reine Claude de Bayay*. *Kitchen Plums*.—*Belle de Septembre*, *Diamond*, *Early Prolific*, *Mitchelson's*, *Orleans*, *Pond's* Seedling, *Prince of Wales*, *Prince Englebert*, and *Victoria*.

RAISING ROCK PLANTS FROM SEED (T. M.).—*Alyssum saxatile* compactum, *Andrietta deltoidea grandiflora*, *Crocineola stylosa*, *Dianthus deltoideus*, *Erimus alpinus*, *Gentiana verna*, *Iberis saxatile*, *I. Tenoreana*, *Linaria alpina*, *L. Cymbalaria*, *Saponaria ocyroides*, *Sedum aizoon*, *S. glaucum*, *S. kamtschaticum*, *Silene alpestris*, *Soldanella montana*, *Statice Pseudo-Armeria*, *Arabis alpina*, *Oenothera macrocarpa*, and *Oxalis tropaeoloides*. The seeds should be sown in pans well drained, and filled with a compost of equal parts of fibrous loam, sandy peat, leaf soil, and sand, making the surface very fine. Sow the seeds evenly, and cover them with fine soil to a depth equal to the

diameter of the seed. Water gently, place in a frame, and keep close, moist, and shaded until the plants appear, then let them have air and light. When large enough to handle prick-out an inch apart in pans, return them to the frame, and keep them close and shaded until they are growing freely, then admit abundance of air. They may be planted out in rows 6 inches apart, allowing 3 inches between the plants in the rows. A sheltered position and sandy soil should be chosen. They will succeed better if potted-off singly in small pots, and wintered in a frame, with abundance of air, but protection from frost. We do not know where you could secure a sale for Watercrosses. Consult a greengrocer.

ITALIAN RYE GRASS NEAR THE SEA (E. R. P.).—It would answer very well if sown where it is to remain in September, but we have no experience of planting it. We should sow two bushels of Pacey's Perennial and one bushel of Italian per acre.

POTS FOR PINE SUCKERS AND SOIL (*Idem*).—The plants having good roots will need 9-inch pots. Three parts fibrous loam and one part old manure will grow them well.

CATERPILLARS ON GOOSEBERRY TREES (J. A. V. C.).—Dust them with white hellebore powder. Syringe the trees afterwards, and repeat the treatment if necessary. These green caterpillars are the offspring of the Gooseberry saw fly, *Nematus Ribesii*. If by "ribbled oats" you mean crushed oats, they will not do the same as ground oats for poultry. Ground oats are a powder to mix with water.

NAMES OF PLANTS (*Stockbridge*).—*Collinsia bicolor*. (F. W. H.).—*Anchusa italica*, Italian Bugloss. (G. S.).—*Phlox fruticosa*, Jerusalem Sage. (T. P.).—1, *Amygdalus*; 2, *Spiraea* sp., but these are too imperfect for naming; 3, *Asperula odorata*; 4, *Geranium Robertianum*. (*Alphal*).—Specimens insufficient for determination. 1, *Vitis* sp.; 2, Probably *Scimmia japonica*; 4, Perhaps *Onoclea sensibilis*. The rest we can make nothing of. (A. M.).—1 and 3, *Salicaria*; 2, *Allosorus crispus*; 4, *Polystichum angulare*; 5, A variety of *Saxifraga hypnoides*. All but the last very imperfect. (J. C.).—We do not undertake to name more than six specimens at a time. 1, A *Pelargonium*, near *P. incrasatum*, but not that species. Specimen hardly sufficient. Rest next week. (R. S.).—1, *Asphodelus luteus*; 2, *Lonicera punicea*; 3, *Veronica gentianoides*. (*Lee Rogers*).—1, *Viburnum pubescens*; 2, *Prunus virginiana*, or a near ally.

POULTRY, BEE, AND PIGEON CHRONICLE.

DOUBLE-CHICKED EGG.

PHILIP CROWLEY, Esq., Croydon, showed us a Golden-spangled Hamburg's egg which had not hatched, but which upon its end being opened showed the heads of two chicks. We had never seen so unmistakable an instance of twin chickens, and we submitted the egg, without disturbing the chicks, to a good authority. He writes to us as follows:—

"It is many days since I met with any case so interesting as that of this egg. Many years ago it was a disputed point whether that which was called a double egg was good for anything. Sitting was not dreamed of; it was held to be a monster on the breakfast table, and was transferred to the kitchen, where it was broken and carefully examined by smelling before it was used. I believe if a fault had been found with an omelette in which one had entered, 'that nasty double egg' would have furnished the excuse. Then one day many years ago, the poultry world was stunned by a letter from a scientific man, stating he had hatched two chickens from one egg. Everybody sought for an explanation that would allow him to disbelieve the assertion without casting doubt on the author. Our best men smiled benignantly, and shook their heads gravely. Those who believed were reminded when they said thirteen chickens came from twelve eggs, that sometimes the broody hen laid an egg after she was down; that it was possible another hen had stepped on the nest and laid in it while the sitter was off. Then I heard of another case and another. Still they were few, and hardly anyone had seen an authenticated case. I have never seen one so good and clear as that of this Hamburg egg. I have preserved it. The two chickens are perfectly formed and well-feathered. They are quite distinct one from the other, adhering to the remainder of the yolk by separate vessels. I can see nothing to have prevented their hatching."

DARK BRAHMAS.

Much has been said lately about this useful and popular breed of fowl. My opinion is that there is not a more thoroughly useful fowl in existence. As a proof of what I state allow me to make a few remarks.

A friend of mine who is well known as a Brahma breeder has this year reared sixty-one chickens. The first brood consisted of eleven from eleven eggs, turning out to be six cockerels and five pullets; this lot of chicks were sixteen weeks old on May 31st, and on that day a pair (cockerel and pullet) weighed exactly 11 lbs. Three of the five pullets commenced laying at fifteen weeks old, and laid nine eggs during the last week. These two facts are quite sufficient to prove the qualities of the Brahma, not only as a rapidly growing bird but also as a good layer. Some of your readers perhaps may say, "Ah! but this is only a solitary instance." In answer to that I state the following:—The same breeder's birds in 1871 commenced laying at seventeen weeks old. In 1872 the pullets commenced laying at sixteen weeks, and this year they are a week in advance. The gentle-

man to whom I allude is Mr. W. Mansfield, of Cambridge, and I have no doubt that the forward condition of his birds is simply due to the high feeding and good attention which they receive at his hands.

A few more remarks and I have done. No man can breed good fowls without care and trouble, but to be really successful he must have a knowledge of the habits and wants of the variety he cultivates, which takes a long time to acquire. I have bred different varieties, but have found the Brahma equal, if not superior to all.—F. W. METCALFE, Cambridge.

BLACK COCHINS.

I HAVE received promises of subscriptions for a cup for Black Cochins at the next Great London Show, as follows:—viz., Martin Smith, Esq., £1 1s.; A. A. Vander Meersch, Esq., £1 1s.; Col. Hassard, £1 1s.; Alfred Darby, Esq., £1 1s.; H. A. Burnell, Esq., 10s. 6d.; R. Taaffe, Esq. (if the value of the cup be increased to £4), £1. C. Marshall Hole, Esq., has also promised a subscription, and I hear from Mr. Wragg that a gentleman at Ipswich will give a £5 cup on certain conditions, which he will arrange with the Secretary.

I wish publicly to thank all concerned for their great support in the matter, and I think it would be well if they would communicate their wishes as to the disposal of the funds, either for adults, chickens, cockerels, or pullets, or allow the funds to be sent to the Secretary for his apportionment.—F. C. HASSARD, Sheerness.

THE BATH AND WEST OF ENGLAND SOCIETY'S POULTRY EXHIBITION.

A GREAT amount of interest is always excited among poultry amateurs respecting this Show, as being not only the beginning of the season for poultry exhibitions, but also because for a long succession of years this division of the Bath and West of England Agricultural Society's Meeting obtains every possible attention and support from the managers of that long-established Society. The efforts of the Local Committee at Plymouth to give out-of-door interest to this year's meeting were unusually successful. Along all the principal streets leading through Plymouth to the show ground the decorations were ample. Venetian poles were placed near the curbstones at intervals of about 40 feet; and from them, garlands of laurels and flowers were stretched from one side to the other, the top of each pole having a gilt spear-head, and each bearing a large wreath of artificial flowers, also a parti-coloured streamer enriched with heraldic devices. These two continuous lines along the sides of the street, coupled with hundreds of the gayest bunting flags from the windows, and numerous very well-constructed triumphal arches, gave such a holiday expression to Plymouth as it has not exhibited for many years.

On entering the showyard the first object that attracted the eye of the visitor was an immense tent to the left hand, in which all the poultry and Pigeons were exhibited in single tier. The light was exceedingly good, and the attention of the poultry Stewards, Messrs. Bush and Edwards, merited the highest commendation. These two gentlemen, long known as most experienced amateurs, left nothing undone to provide for the comfort of every bird on view; and here we must not fail to speak most approvingly of an item in the management that every committee might do well to copy. A very long waterproof tent was erected for the especial preservation from wet of all the empty baskets; it insured in these cases preservation from all injury that might have ensued from repacking in baskets exposed for days to the uncertainty of the weather. The *Spanish* were very fine classes, and for June no *Spanish* fowls were ever shown in better condition. The *Grey Dorking* cock class was very meagre, and the second prize was withheld. The hens were infinitely better, however, a pen of rosy-combed ones being the cup-takers. The *Buff Cochins* were the strongest classes seen for years as to general good quality, and the *Dark Brahm*as were similarly good. Mr. Ausdell was the winner of the Brahma cup, with the cock recently claimed at £30, he being still in the highest condition. Light Brahmas were not so good. The *White Cochins*, however, were excellent. Among the *Game* fowls many were sadly wanting in condition, and also fast lapsing into moulting; still, a grand *Duckwing* shown by Mr. Brown, of Cornwall, was in the highest show trim, and obtained the Game cup. It is rarely even in Lancashire or Yorkshire that so thoroughly good *Hamburghs* are shown, every class being good, and almost every bird in these classes was unusually near perfection. A splendid *Golden-pencilled* cock that was in the highest plumage took the cup. Strange to say, in large entries of *Polands* the *Blacks* were the best of any. The *French* classes were excellent, but many of these varieties were exhibited with the diseased feet of late so unfortunately prevalent; some were so far gone as to be unable to stand many minutes together.

There was a first-class entry of *Ducks*, *Geese*, and *Turkeys*, but not a single Turkey hen was on the ground, as from the time

of year nothing could be devised more undesirable than to take them from their young broods.

In the Pigeon classes the Barbs were very noteworthy, as were the Trumpeters and Archangels. A very large entry of good Pouters caused much attention. In Nuns, in a very fair entry, the whole class was disqualified for trimming, not a single pen being found that had not been tampered with, and some of them most grossly so. Certainly we may hope the time may come when such deceptive practices will not be attempted.

The attendance of visitors by far exceeded the most sanguine expectations, and the Plymouth Poultry Show will be long remembered by those who had the opportunity of witnessing the arrangements. We published the awards last week.

POULTRY EXHIBITION AT HOLLINGWORTH LAKE.

On the 4th and 5th inst. a poultry, Pigeon, and Dog Show was held at Hollingworth Lake. The Show was on a more extensive scale than has been hitherto witnessed in the neighbourhood, and is the first of its kind at that place, though it is likely enough that it will now become an annual institution. Occurring, too, in Whit-week, it drew a large number of pleasure-seekers to the beautiful environs of the Lake, itself a sufficient attraction at almost every season or day of the year that promises fine weather. This Show, we think, was entirely established by the exertions of its Secretary, Mr. James Taylor. It was well supported, and deservedly, for, in addition to the three prizes in each class, twenty three-guinea cups were awarded. The arrangements were ample. A handsome poultry tent was erected on the croquet ground adjoining Mr. Yarwood's Lake Hotel, and in close proximity to it was the shedding for the Pigeons.

The Judges in the poultry and Pigeon department expressed their unqualified approval of the specimens brought under their notice, which were equal, they believed, to any stock they had seen at any show within the past few years.

The prize list was as follows:—

GAME.—Black-breasted and other Reds.—Cock.—1 and 2. C. W. Brierley, Middleton. 3. R. Hemingway, Halifax. Hen.—1 and 2. C. W. Brierley, 3. O. Taylor, Crompton. *hc*, B. Consterdine, Littleborough; H. Jennings, Allerton. C. T. Dyson, Halifax.

GAME.—Any other variety.—Cock.—1. C. W. Brierley. 2. J. R. Armistead, Eccleshill. 3. Wilson & Hodgson, Illingworth. Hen.—1. C. W. Brierley. 2. T. Dyson.

SPANISH.—Cock.—1 and 3. J. Powell, Bradford. 2. R. Newbitt, Epworth. Hen.—1. J. Powell. 2. C. W. Brierley. 3. Mrs. Tonkina, Bristol. *hc*, J. Bowness, Newchurch. C. J. Thresh, Bradford.

BRAHMS.—Cock.—1 and 2. T. F. Ansdell, St. Helens. 3. H. Lacy, Hehden Bridge. *hc*, T. Lord, Littleborough; W. Peacock, Caldermoor, Littleborough. Hen.—1, 2, and 3. T. F. Ansdell. *hc*, E. Kendrick, jun., Lichfield; J. Watts, Birmingham.

COCHINS.—Cinnamon and Buff.—1 and 2. W. A. Taylor, Manchester. 3. W. Harvey, Sheffield. *hc*, C. Sidgwick, Keighley. Hen.—1 and 2. W. A. Taylor. 3. W. Harvey. 3. C. Sidgwick. *hc*, E. Kendrick, jun.; W. A. Taylor.

COCHINS.—Any other variety.—Cock.—1. T. Aspin, Church, Lancashire. 2. W. A. Taylor. 3. H. Beldon, Bingley. *hc*, W. A. Taylor; J. Walker, Cronkeyshaw. Hen.—1. T. Aspin. 2. W. A. Taylor. 3. R. S. S. Woodgate. *hc*, Rev. L. Surry, Beldale; W. Taylor, Beldale.

POLANDS.—Cock.—1. H. Beldon. 2. W. Harvey. 3. P. Unsworth. Hen.—1 and 2. H. Beldon. 3. W. Harvey.

DORRINGS.—Cock.—1. J. White, Northallerton. 2. J. Stott, Healev. 3. Rev. E. Bartram, Berkhamstead. *hc*, W. Harvey; W. H. King, Rochdale; E. Leach, Rochdale; J. Stott. Hen.—1. J. Stott. 2. Rev. E. Bartram. 3. W. H. King.

HAMBURGS.—Golden-pencilled.—Cock.—1. H. Beldon. 2. J. Bowness. 3. J. Hall, Stockstands. *hc*, J. Ogden, Middleton. Hen.—1 and 2. G. J. Duckworth, Church. 3. J. Hall. *Silver spangled.*—Cock.—1. H. Beldon. 2. J. Fielding, Newchurch. 3. H. Beldon. *hc*, Ashton & Booth, Broadbottom, Mottram. Hen.—1 and 2. J. Fielding. 3. H. Beldon. *hc*, Ashton & Booth; H. Beldon; J. W. Edge.

HAMBURGS.—Golden-pencilled.—Cock.—1. G. & J. Duckworth. 2. H. Beldon. 3. T. Wingley, jun., Middleton. Hen.—1. J. Bowness. 2. H. Beldon. 3. T. Wingley, jun. *Silver-pencilled.*—Cock.—1 and 3. J. Bowness. 2. J. Ashworth, Burnley. Hen.—1. J. Ashworth. 2. H. Beldon. 3. J. Bowness. *hc*, J. W. Edge; J. Rhodes, Accrington.

HAMBURGS.—Black.—Cock.—1. H. Beldon. 2. J. Bowness. 3. C. Sidgwick. Hen.—1. H. Beldon. 2. J. Bowness. 3. J. Hope, Washbrook. *hc*, H. Ashworth; H. Hoyle; S. Lancashire, Chadderton.

ANY OTHER DISTINCT BREED.—1. W. Harvey. 2. J. J. Malden, Biggleswade. 3. J. H. Fielden, Tadmor. *hc*, G. Anderson, Accrington; G. W. Hibbert, Hyde. The best bird in this class was a Cochon-China hen belonging to Mr. A. Darby, of Bridgeforth, but it was wrongly entered.

BANTAMS.—Game.—Cock.—1 and 3. S. Smith, Northowram. 2. C. Ashworth, Halifax. *hc*, A. Barton, Hasingdon. 2. B. Bins, Milnrow. Hen.—1. S. Smith. 2. T. Sharples, Rawtenstall. 3. W. H. Rothwell, Rochdale. *hc*, S. Smith. *Any other variety except Game.*—Cock.—1. W. A. Taylor. 2. H. B. Smith, Broughton. 3. E. Walton. *hc*, G. Anderson; Miss J. M. Frew, Kirkcaldy; E. Walton. Hen.—1. H. B. Smith. 2. W. A. Taylor. 3. E. Walton. *hc*, T. Cropper; Master A. Frew; W. Harvey.

DUCKS.—Aylesbury.—Drake.—1 and Cup, J. Walker, Rochdale. 2 and 3. R. Hutchinson, Shawmoss, Hollingworth. *hc*, T. Tomlinson, Bury; J. Walker. Duck.—1 and 2. J. Walker. 3. R. Hutchinson.

DUCKS.—Rouen.—Drake.—1. P. West, Abram, Wigan. 2. S. H. Stott. 3. T. Wakefield, Newton-le-Willows. *hc*, P. Unsworth, Lowton, Newton-le-Willows. C. C. Holt, Rochdale. Duck.—1. T. Wakefield. 2. E. Smith, Timperley, Cheshire. 3. P. Unsworth.

DUCKS.—Any other variety.—Drake.—1. J. Watts, Birmingham (Carolina). 2 and 3. H. B. Smith, Broughton. *hc*, C. W. Brierley, Middleton; J. J. Malden, Biggleswade; J. Walker (Black East Indian). Duck.—1. C. W. Brierley. 2. J. J. Malden. 3. H. B. Smith. *hc*, T. Tomlinson.

GESE.—Grey.—Gander.—1. J. Walker. 2. S. H. Stott, Preston. 3. B. Consterdine, Littleborough. Goose.—1. C. M. Roys, Greenhill, Rochdale. 2. S. H. Stott. 3. J. Walker.

GESE.—White.—Gander.—1 and 2. J. Walker. Goose.—1 and 2. J. Walker. **TRUMPETERS.**—Cock.—1 and Cup, C. W. Brierley. 2. E. Kendrick, jun., Lichfield. 3. E. Lord, Bacup. *hc*, B. Consterdine, Littleborough. Hen.—1. C. W. Brierley. 2. E. Kendrick, jun.

SELLING CLASS.—Cock.—1. J. Bowness, Newchurch. 2. A. Bamford, Middle-

ton. 3. C. W. Brierley. *hc*, S. Fielden, Tadmor (Crève-Cœur); J. Lee, Middleton (Cochon-China); E. Walton, Rawtenstall. C. H. Magson, Littleborough. Hen.—1 and Cup, P. F. Farness, Rawtenstall. 2. C. W. Brierley. 3. C. Holt, Rochdale. *hc*, A. Bamford; Mrs. C. Carr, Bingley; R. J. Edleston; R. Hutchinson, Hollingworth; J. Powell, Bradford; R. Unsworth, Lowton, Newton-le-Willows.

PIGEONS.

CARRIERS.—Black.—Cocks.—1 and 2. R. Fulton, London. 2. H. Yardley, Birmingham. 3 and *hc*, E. Horner, Harewood, Leeds. Hens.—1, Cup, and 3. R. Fulton. 2. E. Horner.

CARRIERS.—Any other colour.—Cocks.—1. E. Horner. 2 and 3. R. Fulton. Hens.—1 and 3. R. Fulton. 2. E. Horner.

POUTERS.—Red or Blue.—Cocks.—1. W. Harvey, Sheffield. 2. E. Horner. 3. W. Nottage, Northampton. *hc*, R. Fulton; E. Horner. Hens.—1. R. Fulton (Blue). 2 and 3. E. Horner. *hc*, W. Nottage.

POUTERS.—Any other colour.—Cocks.—1. Cup, 2, and 3. R. Fulton (White and Yellow). *hc*, E. Horner; W. Harvey. Hens.—1 and 3. R. Fulton (Yellow and White). 2. W. Harvey. *hc*, R. Fulton (White); E. Horner.

TUMBLERS.—Short-faced Almond.—Cock.—1 and Cup, J. Ford, London. 2. R. Fulton. 3. J. Fielding, jun., Rochdale. *hc*, R. Fulton; E. Horner (2). Hen.—1. J. Ford. 2. R. Fulton. 3. J. Fielding, jun. *hc*, E. Horner; W. Harvey, Sheffield; J. G. Taylor, Huddersfield.

TUMBLERS.—Any other variety Short-faced.—1 and Cup, J. Fielding, jun. 2 and 3. J. G. Taylor. *hc*, W. Harvey; E. Horner; H. Yardley.

TUMBLERS.—Any other variety Long-faced.—Single Bird.—1 and 3. J. Ford. 2. J. Watts, Staleybridge. *hc*, R. Fulton (Yellow Mottled); D. Riddibough, jun., Bradford (2). C. W. J. Waburst, Staleybridge.

OWLS.—Foreign.—1. T. W. Townson, Bowden. 2, 3, and *hc*, J. Fielding, jun. BAKES.—1 and Cup, J. Fielding, jun. 2. E. Horner, Leeds. 3. G. J. Taylor, Huddersfield. *hc*, J. C. Kershaw, Littleborough; R. Fulton; J. Fielding, jun.

OWLS.—English.—1. J. Chidwick, Bolton. 2. E. Clay, Manchester. 3. B. Consterdine, Littleborough.

TURBOTS.—1 and Cup, B. Consterdine. 2. J. G. Taylor. 3. W. Lamb. *hc*, R. Fulton; W. Kitchen, Feniscowle, Blackburn.

FANTAILS.—1 and 2. J. F. Loverside. *hc*, E. Horner.

TRUMPETERS.—1. E. Horner. 2. W. Harvey, Sheffield. *hc*, R. Fulton.

COCHINS.—Red or Yellow.—1 and 2. R. Fulton. 3. E. Horner. *Any other colour.*—1 and 3. E. Horner. 2. G. J. Taylor, Huddersfield.

DRAGONS.—Blue or silver.—1 and Cup, J. Wright, Manchester. 2. W. Sefton, Blackburn. 3. B. Brierley. *Any other colour.*—1 and 2. F. Graham. 3. J. Holland.

ANTWERPS.—Short-faced.—Cock.—1 and Cup, H. R. Wright, North Birmingham. 2. A. Justice, Salford. 3. J. Holland, Manchester. *hc*, J. W. Collinson, Halifax; C. F. Copeland, Birmingham; E. Horner; A. Justice (2); W. Lamb; H. Yardley. 1 and 3. E. Horner. 2. G. J. Taylor, Huddersfield.

ANTWERPS.—Long-faced.—Cock.—1. J. Roberts, Thaxton, Bradford. 2. A. Justice. 3. K. White. Hen.—1. J. Bishop, Skipton. 2. W. Hallwell, Littleborough. 3. S. F. Heap, Littleborough.

ANTWERPS.—Flying.—1 and Cup, J. Roberts, Thaxton. 2. W. Lund, Shipley. *hc*, W. Ellis, Idle; S. F. Heap; A. Justice; H. Mitchell, Bingley; J. Roberts, Thaxton.

ANY OTHER VARIETY NOT PREVIOUSLY MENTIONED.—1 and Cup, W. Lamb. 2. E. Furness, Rawtenstall. 3. E. White. *hc*, E. Horner; J. Watts; H. Yardley. E. White. C. W. J. Waburst.

SELLING CLASS.—1. J. Fielding, jun. 2. E. Horner. 3. W. Harvey. *hc*, W. Lamb. C. T. & W. Oddie; W. H. Rothwell.

The Judges were for Poultry: Mr. R. Teebay, Fulwood, near Preston; Pigeons: Mr. T. Esquilant, Efra Road, Brixton.

BEDLINGTON POULTRY SHOW.

(From a Correspondent.)

THIS, held on the 3rd and 4th inst., was a success, and being the ninth year's exhibition, I have no doubt it will continue to prosper, for it is well conducted. It is worthy of note that the Judge had given satisfaction, although he had been engaged at the eleventh hour, as the gentleman first appointed could not attend.

In *Dorkings* the first-prize pen was good, but I thought the cock much inferior to the hen. The second birds were very good. Of *Spanish* I was glad to see a good entry, but some of the birds show too much of the cauliflower face. *Polish* were of fair merit, especially the first-prize pen. *Game* (single cocks) would have been an exhibition by themselves, and many were birds of superior merit, the Brown Reds being particularly good. The third-prize bird was of rather an inferior colour, which was, probably, the cause of its being placed so low; he was the most stylish bird in the Show, and one of the whip-tailed variety. The Duckwinged and Piles were good, and most of the prize-takers will no doubt be heard of again. *Hamburghs* of all the four classes were good birds, but I should like to see the Silver-pencilled more clear in the neck; a great improvement in this point is required. In the Any variety class Black *Hamburghs* took first, a splendid pen; Malays the second. I hope to see next year a class for the poor despised Malays, and I venture to say they will muster more entries than several of the classes. Northumberland and Durham are the localities for *Bantams*. There were seventy-three entries. Of the Game variety the first-prize cock was a nice bird; the second-prize bird was not to my fancy, the hackle seemed twisted, although in other respects the bird looked perfect.

DORRINGS.—1 and 3. J. White, Warlaby. 2. Miss Wilson, Woodhorn Manor *hc*, Miss Wilson; J. J. Walker, Kendal.

COCHINS.—Buff Cinnamon.—1 and 2. G. H. Proctor, Durham. 3. J. Short-horse, Hartford Bridge. *hc*, J. Parkinson, New Delaval. C. J. N. Lawson, Hollycarr House. *Any other variety.*—1 and 3. G. H. Proctor. 2. J. Short-horse.

BRAHMA FOOTBALLS.—1 and Cup, W. Swann, Gedling. 2. H. Beldon, Goit-Stock, Bingley. 3. R. Moore, East Rainton.

SPANISH.—1 and Cup, H. Beldon. 2. R. Newbitt, Epworth. 3. Pickering and Dugleby, Driffield. *hc*, H. Dale, Northallerton.

COCHON-CHINA.—1. H. Beldon. 2. J. Nelson, Hexham. 3. Miss Wilson. *hc*, A. Burgess, Carlisle.

BARNDORF.—1 and 2. F. E. Schofield, Morpeth.

GAME.—Any variety.—Cock.—1 and 3. Arkroyd, Eccleshill, Leeds. 2. J. Stark, Bebside. *hc*, T. & J. Robson, Bishop Auckland; J. Brough, Carlisle. Hen.—1, 2, and 3. Arkroyd. *hc*, J. Stark; D. Harley, Edinburgh. *Black-breasted and other Reds.*—1. T. Young, Bebside. 2. Arkroyd. 3. J. Nelson. *hc*, T. Middlemiss, Seaton Delaval Colliery; J. Brough. C. J. Dixon, Monkwearmouth. *Duckwings or other Greys.*—1, Cup, and 3. Arkroyd. 2. D.

Harley. *hc*, J. Nelson. *Any other variety*.—1, J. Brown, Seghill. 2, Pickering and Dugdaley. 3, — Drysdale, Longhirst Colliery. *c*, J. Brough.
 HAMBOURGERS.—*Golden-spangled*.—1, Cup, and 2, H. Beldoon. 3, G. Holmes, Great Driffield. *Silver-spangled*.—1 and 2, H. Beldoon. 3, G. Holmes. *hc*, G. T. Galloway, R. Moore.
 HANCOCKS.—*Golden-pencilled*.—1 and 2, H. Beldoon. 3, G. Kidson, Norby, Thirsk. *hc*, Miss Elliott. *c*, T. Jordan, Longhorsley. *Silver-pencilled*.—1 and 2, H. Beldoon. 3, G. Holmes. *hc*, D. Cheyne. *c*, R. Moore.
 GUINEA FOWLS.—1, B. B. Blackwell. 2, Mrs. Robson. 3, Countess of Tankerville.

ANY OTHER VARIETY EXCEPT BANTAMS.—1, H. Beldoon. 2, R. Hawkes, Seasham. 3, Rod, C. Miss Wilson.

BANTAMS.—*Cock*.—1, F. Steel, Halifax. 2, J. Douglass, North Seaton Colliery. 3, E. Rutherford, Bedlington Colliery. *Hen*.—1, R. Nesbitt. 2, F. Steel. 3, G. Hall, Kendal. *hc*, E. Walker; J. Nelson.

GAME BANTAMS.—*Black-breasted and other Reds*.—1 and Cup, G. Hall. 2, F. Steel. 3, W. Davison. *hc*, J. Nelson. *c*, G. Bell. *Any other variety*.—1, T. and J. Robson. 2, F. Steel. 3, A. Frew, Kirkcaldy. *hc*, E. Rutherford; Ross and Pyle.

BANTAMS.—*Any other variety except Game*.—1, H. Beldoon. 2, A. Frew. 3, J. Neasham. *hc*, G. Holmes.

DUCKS.—*Aylesbury*.—1, T. Carver. 2, W. Stonehouse. 3, Miss F. Wilson. *Rouen*.—1, Cup, and 3, Miss F. Wilson. 2, J. Nelson. *hc*, T. Carver. *Any other variety*.—1 and 3, W. Binne, Padsey, Leeds. 2, F. E. Schofield.

TURKEYS.—*Cock*.—1 and 2, Miss F. Wilson. 3, M. Kew, Market Overton.

SELLING CLASS.—1, W. Swain. 2 and *hc*, H. Beldoon. 3, Miss F. Wilson. *hc*, C. Gibson; J. Parkinson; W. Harley. — *Mason*. — *Hen or Duck*.—1, M. Aykroyd. 2, H. Beldoon. 3, J. Walker. *hc*, H. Beldoon; W. Jags, Blyth.

COTTAGERS.—*Game*.—1, R. Sharpe. 2, T. Young. 3, J. Stark. *hc*, G. Taylor. *Hamburgs*.—1 and 2, G. Stalker. 3, J. Wilson. *c*, D. Cheyne. *Any other variety except Bantams*.—1, A. Oliver. 2, J. Webster. 3, R. Parsons. *hc*, J. Mills; M. Cooley.

BANTAMS.—*Any variety*.—1, J. Young. 2, W. Bell, Bedlington. 3, J. Short, Bedlington.

PIGEONS.

CARRIERS.—1, G. Sadler. 2, Thompson & Simpson, Wideopen. *hc*, H. Yardley, Birmingham. *c*, Lord A. Cecil, Woodhorn Manor; E. A. Ryott, Butelad.

TOMBERS.—1 and 2, R. & J. Andersen *vhe*, Thompson & Simpson; — Blenkinsopp, Newcastle; W. Brydone; R. Blacklock, Sunderland. *c*, Thompson and Simpson.

POUTERS.—1, H. Simpson. 2, J. Bell, Newcastle-on-Tyne. *hc*, H. Simpson; Thompson & Simpson.

GRACIOSUS.—1, H. Yardley. 2, — Blenkinsopp. *hc*, W. Harrison.

NUNS.—1, J. Watts. 2, H. O. Blackinsopp.

OWLS.—1, H. Yardley. 2, — Blenkinsopp.

TURBITS.—1, J. Watts. 2, C. Laws, Newcastle.

BARBS.—1 and 2, — Blenkinsopp. *hc*, H. Yardley.

JACOBIANS.—1, H. Yardley. 2, W. Brydone. *hc*, — Blenkinsopp.

FANTAILS.—1, W. Brydone. 2, J. G. Lovelandside, Newark. *hc*, J. Kemp, Haslegrave.

ANY VARIETY NOT PREVIOUSLY MENTIONED.—1, M. Orle, Sedgfield. 2, J. Watts. *hc*, H. Yardley. *c*, R. Laws, Newcastle; R. Blacklock.

SELLING CLASS.—1, Thompson & Simpson. 2, W. Brydone. *hc*, A. Frew. *c*, R. Blacklock; W. J. Doukin, Newcastle.

CAGE BIRDS.

CANARIES.—*Belgian* (Clear or Buff-ticked).—1, R. Hawman, Middlesborough. *Norwich* (Clear Yellow).—1, T. Arkle, Bedlington Station. 2, W. Ward, Cambois Colliery. *hc*, J. Baxter, Newcastle. *Norwich* (Clear Buff).—1, W. Ward.

2, T. Arkle. *Norwich* (Crested).—1 and 2, J. Baxter. *Glasgow Doves*.—1, W. Matthews, Broomhill Colliery. 2, J. Kerr, Eggwood Colliery. *Mules* (Yellow).

1, R. Hawman. 2, H. Clarke. *Mules* (Buff).—1, R. Laws. 3 and *hc*, R. Hawman. *c*, J. Baxter. *Common*.—1, J. Stephens, Middlesborough. 2, W. Dawson.

GOLDFINCHES.—1, T. Curley. 2, T. Black. *hc*, J. Baxter. *c*, J. Stephens.

LINNETS (BROWN).—1, J. Baxter. 2, J. Stephens. *c*, W. & C. Barmston, Middlesborough.

SINGING BIRDS (Any other variety).—1 and *c*, W. & C. Barmston. 2 and *hc*, J. Baxter.

ANY OTHER VARIETY EXCEPT SINGING BIRDS.—1, K. Peasey, Bedlington. 2, J. Young. *c*, J. Watson.

SELLING CLASS.—1, J. Baxter. 2 and *c*, T. Curley.

A Gold Medal awarded to the gainer of the greatest number of points in the Pigeons was won by Mr. Blenkinsopp.

JUDGES.—*Poultry*: Mr. A. Sutherland, Accrington. *Pigeons*: Mr. F. Esquilant, Brixton. *Cage Birds*: Mr. J. Wilson, Cramlington.

LIMITING PRICES OF EXHIBITION PIGEONS.

In endeavouring to deal with the question of the limiting business it is not my intention to advocate such a system as has been carried out, and which proved so disastrous at the late Dublin Exhibition, but to suggest a mode of regulating the entry fees that will prove beneficial both to exhibitors and the funds of an exhibition also. My opinion on the limiting principle is in accordance with the many opinions on the subject already given in your columns, and I think it impossible to fix a sum, except in the Selling classes, to be agreeable to a majority of exhibitors, and to be attended with the desired result.

Evidently it is the wish of the fancy that the great monopoly of prizes be prevented, yet at the same time none will, or can, reasonably object to the best birds winning, however often they may be shown. But when an exhibition is open to all, let us deal with the question fairly, whether the exhibitor be a fancier, breeder, or dealer, or, in another case, the committeeman with his £5 bird, or the true and high-class fancier with birds no money would buy.

I think the only way of settling the question is handicapping, by making the entry fee on a sliding scale, so that birds which the owner considers of merit (and those most likely to win) shall pay more for entrance than others of less value, and which a fancier for various reasons has a desire to exhibit. The scale I have to propose is in the following proportion, supposing the prizes be 20s., 10s., and 5s., with something in the shape of cups.

ENTRANCE FEES.

For each entry the price not exceeding £5, 2s. per pen.

" " " £10, 3s. "

" " " £20, 4s. "

" " " any sum over £20, 5s. "

It is only necessary to provide an extra column for the entry

fees, next to the price column, for readiness in arriving at the correct amount of entry fees.

The last rate provides for a prohibitory price for those birds which the owners greatly desire to keep, and those who wish to be careful of their entry money will put their birds in at the least price for which they will part with them. In this way the desired end will be accomplished—viz., in many cases the prize birds will be placed at a price easily obtainable. By this means prizetakers will be changing hands, and when next shown will be another person's property; thus the prevention of monopoly.

By those extra chances to obtain good birds the general fancy will visit shows more frequently, and so add to the funds. This principle will also have a tendency to prevent the point-cup swindles, as in the case of borrowing birds. For that purpose the exhibitor (I will only call him so in this case) will find the entrance fees a stopper for him, as borrowed birds are not to be sold.

I have been somewhat disappointed in not finding some remarks on my last subject—viz., "single-bird system." If it is acknowledged as an established and thoroughly understood thing, I can only say, Let it go on in success already commenced; but I hope the general fancy will take the above matter up, and that committees will adopt the proposed plan for their next exhibitions, which, with the already established principle of single-bird exhibiting, make shows almost self-supporting. My next notes will be on point cups.—IMPARTIAL.

JUDGES OF PIGEONS.

I was pleased to see Mr. Yardley's letter in your issue of May 22nd, so fully supporting Mr. Hewitt's views on the subject. As a Pigeon exhibitor I am fully convinced that the greatest need for reform is in the appointment of the judges. Often gentlemen are appointed to adjudicate who have never been large breeders or exhibitors; oftentimes gentlemen are so appointed who have only kept one variety of Pigeon, and such a man cannot be capable of judging twelve or more varieties of Pigeons. Again, how often do we see committees appoint only one gentleman to judge poultry and Pigeons? In such a case can anyone give satisfaction? Now that the question of Pigeon judging has been raised by Mr. Yardley, and as that gentleman visits many shows during the year, and is himself an acknowledged good judge, perhaps he will name in your pages three or four of those whom he considers to be the best judges all round of Pigeons.

I hope the matter will be taken up in a fair spirit by other correspondents, so that it may be properly sifted before the showing season commences.—A LANCASHIRE FANCIER.

THE SALE OF GAME AND RABBITS.—According to a return to the House of Lords, the licensed game-dealers last year in England sold of game, 1,485,553; wild fowls, 536,254; Hares, 640,293; and 4,406,833 Rabbits. In the United Kingdom the game numbered 1,641,960; wild fowls, 580,388; Hares, 702,830; and Rabbits, 5,104,817.

OUR LETTER BOX.

BOOKS (*Faxhali*).—Our "Poultry Book for the Many" will suit you. You can have it free by post if you enclose seven postage stamps with your address.

HENS DROPPING THEIR EGGS (*Item*).—Provide your fowls with some laying boxes, and if they will not use them take away their perches for a few nights. After they have corrected their evil ways you may restore the perches.

LEG-WEAKNESS—CHICKENS DYING (*Owen*).—You should tell us how your fowls lodge and feed, and we might then, perhaps, find the cause of their ailments. The flooring of their houses, if of anything but earth, will cause cramp. Insufficient or improper feeding will cause weakness, and that will prevent them from standing up. The same causes may interfere with the well-doing of the chickens, or the symptoms you name may be caused by parasites. Your fowls should roost in a dry sheltered house with an earthen floor. They should be fed on ground oats or barley meal morning and evening, have a midday feed of Indian corn, changed at times for kitchen scraps or odds and ends. Your chickens should have dough, bread and milk, chopped egg, curd, bread crumbs.

ADDED EGGS (*Negro Novo*).—A clear egg—i.e., one that has never been impregnated, suffers no change from incubation. After some days the germ becomes developed in a fertile egg. At the end of five days the first appearance of life is visible if the egg is exposed to a strong light. Development takes place every day, and there is soon vitality enough in the egg to be susceptible of change from exposure, and consequent loss of necessary heat. It is a sort of death, and the warmth that would have nourished the chick causes the embryo to decay. Corruption and gas follow, and the egg as a natural consequence explodes. There is no method of ascertaining the condition of the eggs till the chicks are sufficiently developed to feel the influence of any change. If they are then put in warm water, those that contain live chickens dance a merry jig on the surface, while the bad ones make no sign. No egg explodes that has not had the germ developed, and fruitful fresh eggs are not injured by travelling. The weather this year has upset the philosophy of many a practised hand. Morning frosts have chilled the eggs that were most exposed, and these have burst. This may have happened three times in your nest. Straw is better than hay for a nest. It does not favour vermin as

much; it does not, in the event of accident and adhesion, require so much trouble to remove. Whenever an egg breaks and makes the others sticky, all the whole ones should be removed, washed in warm water, and thoroughly dried before the hen returns.

DUCK-KEEPING (Aspirant).—Three drakes to six Ducks is one drake too many. If the birds are not akin to each other, and you have all the conveniences necessary for each run, we advise you to pen them separately. Three runs if you will, but they will do just as well in two—a drake and three Ducks in each. There is nothing gained by having too many drakes. Ducks at four years old and older are very heavy, and useful for exhibition, but we should not breed from such a one.

FOWL-KEEPING (Idem).—Your Houdans will do far better at liberty than in confinement. No fowl prefers being shut up. It is only a makeshift for those who have no other means of keeping them. You can breed good chickens from the two sittings of different strains if you cross them, putting the cocks of one to the pullets of the other, and *vice-versa*. You can judge for yourself about the ground oats. If properly ground, they mix into dough as smooth and soft as the best barleymeal. There are only two or three places where they are made. Ordinary ground oats mix as if they were compounded partly of chaff. Fowls will not look at them.

MORE CHICKS THAN EGGS (H. I. L.).—There is no mystery and less difficulty in that which you note. After the hen was put on the eggs she laid two. We know that impregnation, if not interfered with, lasts for weeks. The fact of their cross breed proves their origin.

FOWLS FOR TABLE (Gallus).—Wherever fowls are wanted for table purposes, we advise Dorkings. You are about to fall into a common and fatal error when you talk of trussing and drawing chickens intended for sale. You take thereby much unnecessary trouble, and diminish the value of your goods. When your chickens are fit for the market have them fasted twelve hours before killing, and picked clean while they are hot. Do no more to them. Avoid crosses, and eschew Polands for your purpose. None fatten so well as the Dorkings.

POULTRY PECKING THEIR LEGS (L. A. E.).—The birds are suffering from itching. We advise you to confine them separately, to rub their legs with grease which has no salt in it, and to feed them on cooling food, especially lettuce. It is more than likely the Turkeys ate the feathers from the Brahma's legs. That operation caused them to bleed. The sight of blood induces all poultry to peck, and they would devour the legs till the bird died, or the bone only was left.

FEEDING YOUNG TURKEYS (New Ross).—Your feeding with curd, hard egg, nettles, and pepper is judicious. You may now begin to give some ground oats if you can get them; if not, give some barleymeal mixed with milk. Continue the nettles and the curd. For some weeks the hens must not be allowed their liberty, at any rate not till the sun is well up and every place dry. As a security, you will do better if you keep your hens under rips till the pullets are at least a month or six weeks old. An empty china crate is a good rip for a hen Turkey; there is room for her to move about, and it enables you to feed the pullets without their choice food being taken by other poultry. Let them have grass at will, lettuces, and all things of the sort. When they are two months old you may give them dough made of two-thirds barleymeal, and one of ground beans and peas, mixed with milk. Even when the hen has her liberty it must not be till all is hot and dry. The hen would drag them about through white frost and cold dew, and though she started with fifteen and came home with four, she would "rest and be thankful," and ask no questions.

ARTIFICIAL HATCHING (Incubatrix).—There is little difficulty in hatching chickens artificially, but the difficulty commences after they are hatched. We have known many incubators bought, tried, and abandoned.

STARTING A PIGEON LOFT (Inquirer).—You can start a Pigeon loft at any time of the year. Now is by no means a bad time, as the birds would breed at once, and consequently settle soon in their new home. With respect to varieties for profit, if you had some common-bred Dragons and some moderately-sized Runts, they, if crossed, would produce good breeders and large-sized Pigeons. The very large Runts, the prize birds, are very dear, and also bad breeders. A stout-built common Pouter cock or two answers to cross for profit, but not Pouters by themselves, or the long thin prize birds. Your having "ample room" is a great thing. Lots of young birds and "ample room" go together, provided the old birds are well fed; whereas, if the room is small, quarrels, broken eggs, and young ones pecked to death naturally ensue. Keep the new birds shut-in a month, and let them out at first in the evening.

BEE MEMORANDA (New Subscriber).—Mr. S. Bevan Fox writes in reply to your queries. "1st, The hive mentioned by me at page 383, No. 632, is not manufactured for anyone for sale, but I could get them made for a 'New Subscriber' if desired. At the same time I think the Woodbury hive, which can be obtained of Messrs. Neighbour, of Regent Street, London, would equally answer his purpose, though the dimensions of hive and frames are somewhat smaller. 2nd, The advice given by 'B. & W.' page 422, as to the immediate removal of a swarm to the old stock's stand, is quite sound. No bee will be lost, as all the stragglers, on finding no queen at the place where they first settled, will return to their old position, and there discovering the object of their affections, will gladly settle into their new quarters. 3rd, Bees can be kept in a room having a covered passage under the window, or through the wall, but the distance they would have to travel in the plan drawn by your correspondent would be much too great for success. 4th, The combs are built straight on four of the bars of 'New Subscriber's' hive, but the fifth comb is constructed close to the fourth, and the proper bar is neglected. This should be rectified at once; the misplaced comb should be cut out, secured to the bar, and reinserted. It would be advisable to take out the other combs, reverse the order of their standing, and perhaps shift them so as to drop down the fifth comb between two regularly built ones. If by this alteration of their positions, any portions of the combs should come into contact, the projecting parts may be pared away at the next examination, and straight combs ensured. Bar or frame hives are of no advantage, unless perfect facility in removal of combs is attained."

ANTS IN A BEE-HIVE (A Young Apiarian).—Ants are very difficult to get rid of, but they can be prevented from crawling up your bee-stands by keeping up a constant tarring of the under side of the stands. They will not cross wet tar. We have got rid of them by pouring a quantity of petrolina about the stands from time to time.

MOVING A STOCK (J. N. Teignmouth).—You acted very unwisely in removing your hive 30 yards. The cluster of bees you discovered on the old stand was not a swarm as you supposed, but the poor unfortunate foragers which returned to the place where they had been accustomed to find their

home. Sisters in affliction, not knowing what had become of their home and of their beloved queen, they gradually clung together. No hive or feeding you could give them would save their lives. The food was probably appropriated by robbers.

TAKING-OFF GLASS SUPERS (Alicia).—We think it better to take the super off directly after swarming if there is no brood in it. Should the super not be full you can give it to some other hive which may want such a addition, as we often have done, after getting rid of the bees.

WASPS ATTACKING HIVES (Bellurbet).—We never heard of wasps destroying bees so early in the season as this. About us queen wasps are only beginning their labours. Hang up bottles with sugared water; this will trap a great many and destroy the nests. Above all, look out for queen wasps and kill them when you can. One year we killed as many as fifty in May and June, and were remarkably free from wasps, while our neighbours a mile off were plagued with them. They do not go far from home.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.	
1873.	Barometer at 32° and Sea level.	Hygrometer.		Direction of Wind.	Temp. at 5 ft. at 1 ft.	Shade Temperature.		Radiation Temperature.		
June.		Dry.	Wet.			Max.	Min.	In sun.		On grass
We. 4	Inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Th. 5	29.867	63.7	59.3	E.	56.4	72.7	49.6	16.8	45.8	0.172
Fri. 6	29.818	60.2	59.0	N.	57.2	72.0	56.9	167.0	55.6	—
Sat. 7	30.032	55.0	54.3	N.	57.1	59.5	52.1	77.6	50.3	—
Sun. 8	30.253	57.8	51.9	N.	55.8	66.0	42.3	120.0	39.2	—
Sun. 8	30.220	55.4	53.0	N.W.	56.0	68.4	48.0	114.0	48.8	—
Mo. 9	30.697	60.0	55.9	N.W.	56.2	70.8	46.7	115.8	43.1	—
Tu. 10	29.795	60.1	55.2	S.W.	57.1	61.8	43.9	104.5	47.0	0.087
Means	30.012	58.9	55.4		56.5	67.7	49.4	106.1	46.4	0.259

REMARKS.

4th.—Dull morning; thunder and heavy rain for a short time in the afternoon; wet evening and night.
5th.—Very dark all the morning, and at noon thick also, but afterwards bright and fine.
6th.—Dull morning; fair all day, but with a cold wind and very little sun.
7th.—Dull morning, but getting brighter and brighter from noon.
8th.—Dull early, but very fine by noon, and so continued all day.
9th.—Fine from 11 a.m. (dull previously). On the whole a very pleasant day, bright without being either too hot or too cold.
10th.—Rather dull day, but little sun and strong cool wind.
Generally fine; although northerly winds continue, the temperature has risen, especially at night.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 11.

The markets generally are very steady, and prices remain almost without alteration. Continental supplies have been unusually heavy during the past week.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1/2 sieve	3 0 to 5 0	Mulberries.....	1 lb.	0 to 0 0
Apricots.....	doz.	2 0 3 0	Nectarines.....	doz.	15 0 30 0
Cherries.....	1/2 box	2 6 4 0	Oranges.....	100	4 0 10 0
Chestnuts.....	bushel	0 0 0 0	Peaches.....	doz.	15 0 30 0
Currants.....	1/2 sieve	0 0 0 0	Pears, kitchen.....	doz.	1 0 3 0
Black.....	do.	0 0 0 0	dessert.....	doz.	6 0 18 0
Figs.....	doz.	6 0 10 0	Pine Apples.....	lb.	3 0 12 0
Fruiters.....	lb.	0 0 0 0	Plums.....	1/2 sieve	0 0 0 0
Colts.....	lb.	2 0 2 6	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	0 3 0 6	Raspberries.....	lb.	0 0 0 0
Grapes, hothouse.....	lb.	6 0 12 0	Strawberries.....	1 lb.	6 0 16 0
Lemons.....	100	6 0 10 0	Walnuts.....	bushel	15 0 30 0
Melons.....	each	6 0 12 0	ditto.....	1/2 100	2 0 2 6

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Artichokes.....	doz.	3	0 to 6	Mushrooms.....	pottle	0	0 to 2
Asparagus.....	1/2 100	3	0	6	Mustard & Cress, packet	0	2
French.....		6	0	12	Onions.....	bushel	4
Beans, Kidney.....	1/2 100	1	6	2	pickling.....	quait	0
Beet, Red.....	doz	1	0	3	0	Partley per doz. bunches	0
Broccoli.....	bushel	0	9	1	6	Parsons.....	doz.
Cabbage.....	doz.	1	0	1	6	Peas.....	quait
Capicums.....	1/2 100	0	0	0	0	Potatoes.....	bushel
Carrots.....	bunch	0	0	0	0	Kidney.....	do.
Cauliflower.....	doz.	3	0	6	0	Round.....	do.
Celery.....	bushel	1	6	2	0	Fishies.....	doz. bunches
Coleworts.....	doz. bunches	2	6	4	0	Hubarb.....	bushel
Cucumbers.....	each	0	6	1	0	Salsify.....	bushel
pickling.....	doz.	0	0	0	0	Savoy.....	doz.
Endive.....	doz.	2	0	0	0	Scorzonera.....	bushel
Fennel.....	bunch	0	3	0	0	Sea-kale.....	basket
Garlic.....	lb.	0	6	0	0	shallots.....	lb.
Herbs.....	bunch	0	6	0	0	Squash.....	bushel
Horseradish.....	bushel	3	0	4	0	Tomatoes.....	doz.
Leks.....	bunch	0	2	0	0	Turnips.....	bunch
Lettuce.....	doz.	1	0	2	0	Vegetable marrow.....	

POULTRY MARKET.—JUNE 11.

The supply continues small, while the trade improves. It will be long remembered as a bad breeding and late season.

	s. d.	s. d.		s. d.	s. d.
Large Fowls.....	6	0 to 6	6	Pheasants.....	0 0 to 0 0
Smaller ditto.....	5	6	6	Partridges.....	0 0 to 0 0
Chickens.....	3	6	4	Hares.....	0 0 to 0 0
Goslings.....	7	0	0	Rabbits.....	1 5 to 1 6
Green Geese.....	0	0	0	Wild ditto.....	0 9 to 0 10
Duckings.....	0	5	6	Pigeons.....	0 9 to 0 10

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 19—25, 1873.	Average Temperature near London.			Rain in 43 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
19	TH	Meeting of Royal and Lionean Societies.	70.8	48.6	59.7	22	44	af 3	18	af 8	0	1	11	2	24	1	170
20	F	Fermoy Horticultural Show.	73.3	50.5	62.4	18	44	3	18	8	15	1	32	3	25	1	171
21	S	Longest Day.	74.4	48.8	61.2	17	45	3	18	8	32	1	53	4	26	1	172
22	SUN	2 SUNDAY AFTER TRINITY.	73.6	47.1	59.9	17	45	3	19	8	53	1	13	6	27	1	173
23	M	Meet. of Royal Geographical Society. [opens.	72.7	48.9	61.5	15	45	3	19	8	20	2	29	7	28	1	174
24	TU	Royal Horticultural Society's Bath Show	74.1	49.1	61.1	20	45	3	19	8	56	2	34	8	●	2	175
25	W	" " continued.	73.0	49.2	61.7	20	46	3	19	8	43	3	27	9	1	2	176

From observations taken near London during forty-three years, the average day temperature of the week is 73.0°; and its night temperature 48.9°. The greatest heat was 93°, on the 19th, 1846; and the lowest cold 30°, on the 20th, 1865. The greatest fall of rain was 0.72 inch.

STOVE AND GREENHOUSE CLIMBERS.—No. 1.



IHAVE long wished and intended to say a few words upon the merits of climbing plants, and as I have during the past season seen so many beautiful examples of them, I am now induced to bring the subject before the readers of this Journal, in order to impress upon their minds the claims climbers have on the attention of all lovers and growers of plants, on account of the rare beauty displayed by many of them, and that, too, with but comparatively little care. Having visited so many gardens throughout the country, as well as having been practically connected with horticulture for many years, I am quite aware that in many places great attention is paid to the culture of these plants, and their merits are fully appreciated, yet amongst amateur gardeners the very existence of climbers is almost ignored. That bare rafters and walls have a bad appearance is a fact I think no one will attempt to deny, and yet how frequently do we see them in the villa greenhouse especially. This, then, is the reason why I would direct attention to these plants, which with comparatively little trouble will not only furnish those eyesores with a rich covering of leafage and bloom, but in addition enable those whose glass accommodation is limited to add a number of really beautiful forms to their collection without incommoding their pot plants, and thus to increase their floral pleasures in the same area.

The objection raised against climbers by many of my amateur friends is, that they grow so rampant that they soon smother the pot plants, and exclude the sun too much for the well-being of the other occupants of the stove or greenhouse. Now, if the climbing plants trained upon the rafters are allowed to grow at random, I must admit these objections are well founded; but, then, there are such operations as thinning-out and pruning, the non-attention to which is the great stumblingblock to so many amateur gardeners, and, I may add, to some gardeners by profession also. In the case of Fuchsias, Geraniums, and other similar plants, everyone admits they require pinching and pruning; yet the climbing plants in too many instances receive no attention, save tying-up, and the results are they smother the plants below them, they become untidy in appearance and dirty, and are, consequently, condemned as a nuisance, when, with a little management, as I have before remarked, they would materially add to the beauties of even a very small house. Under these circumstances I venture to offer a few real gems in the way of climbing plants to the amateur's notice, trusting some of my readers may be induced to extend the number of their rafter and pillar plants.

CLERODENDRON.

C. splendens.—In this superb plant we have one of the most attractive subjects it is possible to train upon a pillar or rafter in the stove. In planting-out thorough drainage should be the first condition to make sure of, and the soil should be composed of a mixture of rich

loam and peat, with a fair proportion of sand. I have found it best to limit the space the roots have to run in, by which means a better command is obtained of all such plants as require to be kept at rest more or less during the winter.

This plant will not require much thinning-out. When it has grown up to the top of the rafter I have seen it treated successfully upon the spur system, and thus it may be kept within moderate bounds. The leaves are broadly oblong, shining green in colour, whilst the bright scarlet flowers are borne in large branching panicles, producing a splendid effect during the greater part of the summer. It requires an abundant supply of water during the summer, but towards autumn this should be withheld to a great extent to assist in ripening the wood; during winter very little will be necessary. Native of Sierra Leone.

C. Balfourii.—This is an improved or larger form of the plant, introduced from Old Calabar, called *C. Thomsonæ*. It is of a strong free growth, and will require occasional thinnings to prevent its shading the plants below it. The treatment may be similar to the preceding kind. The leaves are large and dark green, and the clusters or panicles of bloom are vivid scarlet, the beauty of which is materially increased by the addition of very large pure white calyces, thus rendering it a charming and conspicuous object worthy of a place in every amateur's stove.

STIGMAPHYLLON CILIATUM.

This is a free-growing and an abundant-flowering plant, first introduced to our collections towards the end of the last century, yet seldom to be found occupying the position it deserves. Its blooms are bright orange yellow produced in large umbels, whilst the cordate leaves are light green, and furnished at the edges with numerous eyelash-like hairs. The flowers, which at first sight resemble Orchid blooms, are produced for many months in succession. It should be potted in a mixture of about two parts loam, one part peat and leaf mould, and one part sand. Native of Brazil.

TACSONIA.

As a genus this is nearly allied to *Passiflora*. The following species are all well deserving of general cultivation. They have the following qualities to recommend them—free growth and abundance of bloom, which cannot fail to rivet the attention of all beholders. They should be potted in peat, loam, and leaf mould in about equal parts with a fair proportion of sharp sand added.

T. Van-Volxemi.—Without doubt this is the finest greenhouse climber in cultivation, and that is saying a great deal. The leaves are deeply three-lobed; the lobes lanceolate, acuminate, and toothed at the edges. The flowers are very similar to those of a *Passiflora* in shape, rich carmine crimson in colour, and are suspended upon long thread-like footstalks, each blossom measuring some 5 inches or more in diameter. Native of New Grenada.

T. Buchananii.—Scarcely so free-flowering as the preceding, and requiring just the warmest corner in the greenhouse, yet, nevertheless, well deserving a place in

any collection where space can be afforded it. The leaves are five-lobed, toothed, and dark green, whilst the flowers are large and bright scarlet. Native of Panama.—*EXPERTO CREDE*.

ROSES.

THE yellow Roses on the walls here (Okeford Fitzpaine)—namely, *Maréchal Niel*, *Gloire de Dijon*, and *Céline Forestier*, are as fine as I ever saw them, but the blooms of Roses in the open are very bad as yet, many of them being green-centred, and all of them small. This is not to be wondered at, as here the buds began forming in February, and have been more or less frosted ever since. We have had a fine storm or two, and I hope we shall have some better blooms.

The following Roses are the best that I have tried of late years, and they are good Roses, and of good general attributes:—*Felix Genero*, *Marie Rady*, *Perfection de Lyon*, *Madame Chirard*, *Edward Morren*, *Baron Chaurand*, *Madame Creyton*, and *Baronne Louise Uxkull*. The last two are planted out under glass without fire heat. The Roses preceding them have been amply tested in large numbers—from six to forty each in the open ground of my very exposed garden. They are all very beautiful, and these are certainly first-class Roses—namely, *Edward Morren*, *Perfection de Lyon*, *Marie Rady*, and *Madame Chirard*. Of the last-named Rose I have six plants on its own roots, and six on the *Manetti* stock. I see no difference. It is a famous grower. I believe *Baronne Louise Uxkull* will be a great favourite. It is a great beauty at any rate.

I have read what Mr. Robson has said about pure white Roses. *Baronne de Maynard* is the only pure dead white autumnal Rose, the others being more or less tinted. It is a lovely *Camellia*-formed Rose, and an abundant and continuous bloomer. The dead untinted whites of the summer Roses are the *Unique Provence*, *Magnolia*-shaped, *Princess Clementine*, *Madame Plantier*, and *Pulchérie*; they are all beautiful Roses. The best summer creamy white Rose is *Madame Zoutmann* or *Sœtman*, which is an improved *Comte Plater*. The new Rose *Madame Lacharme* is not, I hear, a pure white Rose. We sadly want a pure full-sized Hybrid Perpetual white Rose.

My Roses on the whole are in good condition; but I fear that persons who did not mulch their Roses and earth them up over the mulching, will find that many of them will die off if sultry weather sets in. All mine were so protected.—*W. F. RADCLIFFE*.

THE PANSY.

ANYONE who has taken the trouble to notice the stands of cut blooms of Pansies which have been exhibited at the spring shows this season must have been struck with the amazing advance made of late years, especially in the Fancy Pansy class. Compare the grand and finely shaped blooms which Messrs. Downie, Laird, & Laing, James, and others now exhibit with the small, rough, and ill-shapen things exhibited a few years ago, and is there any class of flowers that can boast of greater improvement in the same space of time? while in the class of bedding Pansies and Violas, now so useful for spring gardening, a new path for improvement has been struck out. In further evidence of this I have to notice a large collection of blooms sent me by Messrs. Dicksons & Co., of Edinburgh, long noted for their successful culture of these flowers. The brief descriptions which I have appended to this can give but a very faint idea of the marvellous variety of those of the Fancy section; while the Show varieties, not so taking to the general public, yet charm the eye of the florist by their fine form and smoothness.

Most of the bedding Violas and Pansies here named I have growing in my own borders, and, although they have been in bloom since April, are now giving promise of doing what their raisers say they will do—continue in bloom the whole summer. They are of many shades of colour, and in places where many plants are required will, I have no doubt, prove most valuable; and even in smaller places they will be found very desirable, and form pleasing adjuncts in a bouquet of cut flowers. Most of those named are new flowers of the present season. Those in numbers are to be sent out the ensuing season.

FANCY PANSIES.

No. 7.—A remarkably large and high-coloured flower; maroon crimson, with large blotches.

Curio.—Top petals brownish lake; lower petals brown, veined with dark crimson, large blotch. Very curious colour.

104.—White, with immense purple blotch on each petal.

69.—A remarkably smooth and fine flower. Ground white, but nearly covered with immense purple blotches. Extra fine.

119.—Somewhat rough.

62.—Bright magenta, with intense and large blotches, and yellow eye.

132.—Claret ground, with large purple blotch. Very fine.

129.—Deep claret, with large purple blotch.

W. M. Welsh.—Yellow ground, margined with bronzy purple lake; large blotch. Very good.

Beauty.—Light ground, with large blotches almost covering the petals.

Mrs. Cutler.—Bright yellow, with very large blotches.

166.—Light primrose ground, with beautiful well-defined blotches of brownish purple.

107.—White ground, with smooth blotches of light purple in each petal. Extra fine.

Marquis of Lorne.—A very high-coloured brownish crimson flower, with deep blotches.

60.—A well-shaped flower; yellow ground bordered with magenta, and deep blotches.

82.—Rough.

110.—White, purple blotch. Rough.

118.—White, with very large purple blotch.

SHOW PANSIES.

Defoe.—Beautiful smooth yellow ground, with intense purple upper petals; lower margined with the same colour.

10.—Very dark self. Smooth, and of good form.

Tannahill.—Yellow ground. Smooth purple top petals, and belt.

48.—Of the same colour.

2.—Light yellow ground; light purplish top petals, and margin of lower the same.

4.—Good white; clear blotch and eye.

1.—Bright yellow ground, splendid dark purple top petals, lower margined with the same colour.

25.—Bright yellow self.

The Mede.—White ground; light purple top petals, margins of lower petals the same.

3.—Brilliant yellow; dark purple top petals.

8.—White ground. Large and fine.

Senator.—A large and remarkably fine yellow-ground flower, with broad band of maroon, and dark top petals.

6.—Fine dark claret-coloured self.

Lavinia.—White ground, bluish purple.

7.—An immense dark self.

Lochnagar.—Very fine dark plum-coloured self.

Robert Black.—Dark self, of great substance.

Jane Anderson.—Very fine white; solid violet-purple blotch.

George White.—Cream-coloured or very light primrose self. Quite a new shade.

BEDDING VIOLAS AND PANSIES.

Canary (Viola).—Immense size, clear golden yellow, pencilled.

The Tory (Viola).—Deep plum, with dark blotch. Great substance.

No. 1 (Pansy).—Immense size; blue, in the way of Blue King. Very fine.

No. 2 (Pansy).—Light violet blue, with dark blotch.

Snowflake (Viola).—Clear waxy white, slightly pencilled.

Claret (Pansy).—Ground colour shaded claret.

Deep Yellow (Viola).

Ruby (Pansy).—Remarkably fine flower, of ruby-crimson colour.

Scotia.—Clear azure blue, with yellow eye.

Advancer.—Lilac, slightly marked with violet.

Stricta Alba.—White, of great substance.

—*D., Deal*.

THE BUFFALO BERRY.

THE vegetation of the seed of the above seems to be not understood by your correspondent, Mr. Charles Downing, when he says the seeds I have sown will not vegetate until the spring of 1874. I assure him, and all others interested in the matter, that opinion is incorrect, as the seedlings from the seeds I sowed on the 1st of April of this year are already through the ground. The seeds were not rubbed out of the pulp, neither have they had any muck, as suggested by Mr. Downing; they were kept quite dry through the winter, and the pulp had become somewhat shrivelled by the time I sowed, but that soon went to decay in the soil.

In my opinion this is the most natural way to sow all seeds of this description; the sarcocarp performing a most important part in the preservation of the seed through the winter months. I have often remarked the striking difference in the period of vegetation of the seeds of Asparagus that have been washed clear of the sarcocarp in autumn, and that kept intact through the winter. Though both be sown on the same day, the young growth of the latter appears through the soil both earlier and

stronger. This may account in some measure for the want of success attending Mr. Downing's experiments with *Shepherdia* seedlings. I would suggest that his next experiment be made by retaining the pulp on the seeds through the winter.—W. MEIR, *Oulton Park*.

HARDY IBERISES.

A SHORT time ago there was a discussion in your pages about hardy Iberises and their nomenclature. I send you a sprig of each of the three kinds which we grow here. Though late in the season, and the flowers consequently small, they nevertheless show sufficient distinctness of character to be entitled to separate names. As each has separate claims on the attention of cultivators of hardy plants I append a few notes, having grown these Candytufts rather extensively for some years, but I leave it to others to say if the names I give them are the right ones or not.

1. *IBERIS SEMPERVIRENS*.—This is white-flowered with no tinge of lilac, and flowering in umbels on stems somewhat taller than *I. corifolia*. Its leaves are long and narrow, but not pointed, and the plant, as its name implies, evergreen. It is also very hardy, and is not particular as to situation.

2. *IBERIS CORIFOLIA*.—I believe this is sometimes called *I. corneifolia*, from the genus *Correa*, and I have had it with the name of *I. Tenoreana*, under which I have certainly met with it in more than one public garden; but I find it is more often called *I. corifolia*; so, whether right or wrong, I call it so. Perhaps, however, some one will be good enough to give us the correct name. In the Manchester Botanic Garden I see it is named *I. Tenoreana*. But, whatever be its name, it is an exceedingly handsome hardy plant, somewhat dwarfer than *I. sempervirens* and more compact; the foliage also is shorter and broader, and it flowers in a sort of spike rather than in umbels, or the dense mass of florets which compose the head form a sort of round-headed column of pure white, the anthers only being yellow. I place it amongst the most useful and ornamental hardy plants which we have. We have some edgings of beds formed of it that may be two years old; they are a perfect mass of flowers, and being low they look exceedingly pretty. It is in my estimation by far the best of its class, and superior to most other plants of a like character. Certainly with me it is much prettier than the old but scarce dwarf white Rocket, as the latter is at best uncertain and makes an uneven row. I have never observed it ripen seeds, but it is easily propagated by cuttings.

3. *IBERIS GIBALTARICA*.—This differs widely from either of the two above named, being more irregular in its growth, often becoming straggling, and I am not sure if it is so hardy, as I have lost plants occasionally in winter; nor does it present that thrifty evergreen appearance in winter which renders the others so cheerful to look upon; its blooms, too, are widely different, being when first opened of a deep lilac, which fades into a paler colour as time advances, but they present an even uniform umbel, and look pretty. It appears to be most at home on rockwork, where its irregular or rather straggling growth would find a congenial substance to rest upon; and I think it likes to be dry, or to be planted in a dry position. Its foliage is slightly wedge-shaped, being narrow at the base. It is, when the plant is healthy, much larger than that of either of the two kinds previously mentioned, but is often confined to the tips of the shoots, leaving long naked stems destitute of leaves. In my estimation it is far short of *I. corifolia* in beauty and general utility, but is, nevertheless, well worth growing as a distinct kind.—J. ROBSON.

LEEDS HORTICULTURAL SOCIETY.—I have just returned from the Leeds Show, where I acted in the capacity of Judge with my friend Mr. Peach, and I can testify that the Show was a great credit to Leeds, and to the spirited Committee under whose management it was carried out. The plants were exhibited in some of the finest tents I have ever seen—real tents, not large frames covered with canvas. Here were arranged some splendid collections of stove and greenhouse plants, notably those contributed by Messrs. Cole & Sons; while the Pelargoniums, Show, Fancy, and Zonal, were infinitely beyond anything I have seen in or near the metropolis. Of course Mr. Ward's collections are to be excepted; but then, instead of a couple of competitors in each class, there were five or six collections of twelves and sixes, while Zonals were really grand. Roses were not up to the mark, but then it was late for pot Roses. Pansies were shown in large quantities, and the table decorations and bouquets were really some of them of exquisite taste. So far for the Show.

The arrangements seemed to be equally good. There was a go in whole thing different from the *dolce far niente* style one is accustomed to in some places. The Mayor opened the Show; the Committee worked with a will; and the indefatigable Secretary, Mr. Birbeck, must have been pleased at the result of his labours. I think one may augur well for horticulture in the north when one sees such an exhibition held in a place so unfavourable to the growth of plants as Leeds must be.—D., *Deal*.

GARDENING IN THE WEST.—No. 2.

BATH.—2.

THE other public places that claim attention in Bath are the Sidney Gardens and the Abbey Cemetery. The former are situated at the end of Pulteney Street, and their formation dates as far back as 1795. The grounds are tastefully laid out and planted, and the trees, which have now attained gigantic dimensions, contribute to make this charming retreat a promenade of great beauty. Here it is that the shows of the Bath Horticultural Society are held, and every evening throughout the season there is a promenade with music. The ancient restriction of "No dogs or livery servants admitted" has been removed, and those who are not subscribers are admitted on payment of sixpence, irrespective of their being dogs or livery servants. The Abbey Cemetery is interesting in one respect only, as being the last work of London. Its scope is limited, and there is nothing remarkable in the design. The planting may, however, command a passing observation, as exhibiting less of the dull, heavy, sombre effect which is too frequently seen in cemeteries. Here there is a liveliness and a comparative cheerfulness, to which we are unaccustomed in these places, by the introduction of flowering trees and shrubs. Scarlet Horse Chestnuts, Double and Single Scarlet Thorns, *Crataegus* of various species, Double Furze, Laburnums, Roses, Weigelas, Gueldees Roses, and many others, not dotted here and there, but liberally diffused all over the ground in groups and lines. And when we read, as we enter, such inscriptions as "*Resurgam*," "God is not the God of the dead, but of the living," we feel that there is harmony around, and that the sentiments which these inscriptions convey and the truths they teach are helped and strengthened by the beautiful and bright surroundings of the new life which every returning spring brings with it.

We have already stated in a former paper that, although there is great encouragement of horticulture in Bath, there are no great gardens or places where gardening is carried out either generally or specially. The city and its suburbs abound in detached villas, varying in size from an eighth of an acre to two or four acres. They all have their gardens, and most of them a conservatory, and their style of decoration assumes the "hedding-out" form. The consequence is, the gardening taste taken collectively is very great, and the places are individually very small. These terraces upon terraces of detached villas embosomed in trees remind us of Moscow, and if their roofs were painted as those of Moscow are, the resemblance would not be unlike.

An exception to all the places in the immediate vicinity of Bath is Vellore, the lovely residence of the rector of the Abbey, the Rev. Charles Kemble. It is situated at Bathwick, on an eminence a little above the Sidney Gardens, and within an area of about twelve acres is concentrated every feature and representation of gardening. The pleasure grounds are artistically designed and planted; and although there are basins, fountains, statuary, rockwork, and grottoes introduced, there is no crowding, no discord, and nothing to offend the eye by its incongruity. The lawns, the glades, the terraces, the flower beds and shrubberies are all spacious; the trees are tastefully grouped and embrace a great variety, and at the time of our visit the Scarlet Horse Chestnuts and the Thorns were gorgeous in their spring array. The glass structures occupy an area of an acre, and consist of a glazed corridor leading from the house which serves as a conservatory. Then there are a stove, a Palm house, Fern house, and smaller stove, a large orchard house, in which the trees are planted out in the borders and covered with fruit; vineries, pits, and, in short, every form of garden structure it is possible to imagine. Close to the house there is an orchard of pyramidal trees well managed, and showing a good crop of fruit. The place is kept in the most beautiful condition, and everything is done in the best style of gardening, reflecting great credit on the skill of Mr. David Wicks, who has been gardener here for the last twelve years.

It is not among the upper classes alone that this love of gardening is fostered. It descends even to the labouring

classes, some of whom make it their pastime, and in many cases prosecute it as a help to the household. Instead of keeping a pig they have a greenhouse or a frame or two, and in these they propagate "bedding stuff," for which they find a ready sale, or which they send to an auction mart in the city, where periodical sales of plants are held, and where they realise rather unremunerative prices. These sales interfere somewhat with the trade of the regular florist, who cannot compete in the cost of production with these amateur growers.

The nurseries about Bath are, like the gardens, of limited extent, the largest not being more than sixteen acres. This to some extent is attributable to the high price of land in the immediate vicinity of the city. The oldest are those of Mr. Drummond, Mr. Carpenter, Mrs. Tiley, and Mr. Kitley. The two former are situated in Weston Lane. Besides a general stock of trees and shrubs, Mr. Drummond's speciality is in house plants. Here may be seen good collections of stove and greenhouse plants, and in some cases excellent specimens. We observed among these a fine plant of *Adiantum farleyense*, 5 feet in diameter. This is one of the original plants, and certainly one of the finest we have ever seen. The large specimen *Azaleas* were turned out of the house and were just going out of bloom, and we observed in another house some good specimens of *Ericas*, such as *elegans* and *Cavendishii*, &c. This is undoubtedly the leading nursery in Bath for exotic plants.

Mrs. Tiley's is more of a general nursery, and is situated at Bathwick, immediately behind Sidney Gardens. The extent altogether is sixteen acres, a good deal of this being occupied with ornamental trees and shrubs, and Roses, for which this nursery has long had a reputation. The houses contain the ordinary class of flowering greenhouse and stove plants, and Ferns, and we were pleased to see some attention paid to the cultivation of herbaceous perennials and alpinas.

Also adjoining Sidney Gardens is the small but select nursery of Mr. Pavitt, where Tea-scented Roses are extensively grown in great perfection, and in the open air without any protection. Mr. Pavitt cuts the plants down close to the ground every year; they begin to bloom in June, and from that time till October there is a constant profusion of flowers, lasting over a period of five months. Mr. Pavitt boasts of having every known variety of Tea-scented Rose in his collection. Besides these, we observed a choice stock of variegated trees and shrubs.

Mr. Kitley's grounds, at Lyncombe Vale, are mainly occupied with market-garden produce, but he also grows flowers to a considerable extent. We mention Mr. Kitley, as being a person long well known in the gardening world, a great cultivator of Strawberries, and as the raiser of Kitley's Goliath and Carolina superba. At Walcot, the nursery formerly occupied thirty years ago by Salter & Scammel is now in the possession of Mr. Walters, son of the nurseryman of that name at Trowbridge.

In close proximity to Mr. Kitley is Mr. Alexander, who devotes his attention mainly to forcing flowers for decoration and bouquets, a trade which is confined mostly to the Bath season, or the winter and spring months. Besides Hyacinths and other bulbs extensively forced, are Christmas Roses and Solomon's Seal. We here met with a Potato peculiar to the district, called Shiner Kidney. It is not exactly a Kidney, but half round, and it is said to be as early as the old Ashleaf, and a much better cropper. Mr. Cooling has a nursery at Batheaston, in which he grows a good general stock.

THE SLUG-WORM, OR SLIMY GRUB, IN NEW ZEALAND.

THIS is the larva of a Saw-fly, called by Linnæus *Tenthredo Cerasi*, from its feeding upon Cherry trees. People here who possess gardens large or small, are just becoming alive to the depredations committed by this dirty slimy-looking caterpillar, which is making such havoc (eating the parenchyma of the leaves, leaving only the skeleton behind) with our Pear trees, Plums, Cherries, Thorns, Quinces, Willows, and other things. Most of the trees mentioned are now quite denuded of their leaves in and around Christ Church long before their right season. We have been annoyed with these ugly grubs on our trees every autumn for some years past, but this autumn they are worse than ever. Many people here not acquainted with them nor their history, ask me—What is the cause of the leaves dropping off the trees so soon this year? Judge of their astonishment when I explain that the trees have been injured

by these slug-worms, and that these have probably already robbed them of a crop of fruit in the forthcoming year. If I mention any of our remedies used in gardens for the destruction of these slimy grubs, a dislike is soon expressed, by the fair sex in particular, to touch or go near the grubs on account of their disagreeable stench. It puzzles me, and many other people here, how they can have found their way to the Antipodes. Here in Canterbury they are, at any rate, and in very great abundance too, to our very great annoyance.

SINCE dispatching my first scrap about the Slug-worm by Suez mail, another opportunity has occurred for me to communicate some additional ideas on the subject. This time I send you a few fresh-gathered leaves for your consideration. Our Bigarreau Cherry trees are generally the first to become affected, and our Quince trees the last. I am almost certain that if we had very wet autumns instead of such unusually fine ones we should not be so much troubled with this pest. Depredations committed by it on the leaves seem to be confined to the natural order Pomaceæ, or Appleworks, with one exception only as far as I can discover—namely, the common Willow, but I have to state that the leaves of this are not stripped in such a ravenous manner as in the Pomaceæ.



Fig. 1.—*Tenthredo adumbrata* (larva state).

Here at the Antipodes we generally discover the slug-worm in a very young state on the leaves about the end of January. This is shortly, I presume, after the time the flies emerge from their tombs. About the middle of April they seem to have completed their ravages, only an odd one being left behind here and there, they having disappeared in the shape of a cocoon, for the purpose of entering the earth.—WILLIAM SWALE, Canterbury, New Zealand.

[Our correspondent gave a long extract of an article by the late Mr. John Curtis, the entomologist; but as some confusion has existed between this and similar grubs, we subjoin the following extract from Dr. Boisduval's "Essai sur l'Entomologie Horticole," from which also we copy a very characteristic engraving of the destroyer at work on the leaf. Under the head of *Tenthredo adumbrata*, Klug, he says:—Arboriculturists are familiar with a slimy black larva like a little leech, which appears as if glued to the leaves of Pear trees, and which is of very common occurrence in fruit gardens in September and October. From its form and appearance, Réaumur called it the slug-worm. At the end of autumn, when it has attained its full size, it somewhat resembles a small tadpole. It has twenty feet, which, however, cannot be seen without dislodging it from the leaf. It does not begin at the edges of the Pear leaf, but gnaws away the parenchyma in the middle, leaving the smallest veins and the epidermis of the under side untouched, so that the leaves attacked are left like the finest lace (see fig. 1).

After four times casting its skin it changes to an orange yellow colour, comes down from the tree, and forms a cocoon from particles of soil bound together by a few silken threads.

The perfect insect (see fig. 2), according to Hartig, is $2\frac{1}{2}$ lines long, smooth, black, and shining, with the horns almost as long as the abdomen; the legs are black, the joints and thighs reddish brown, the wings obscure.

This grub is frequently very destructive to wall trees. It appears on Pear trees when the fruit are from one-half to two-thirds of their full size, and by destroying the parenchyma of the leaves it prevents the elaboration of the sap, brings growth to a standstill, and the Pears, instead of swelling, drop.

Some authors consider that the slug-worm of Réaumur produces the *Tenthredo Cerasi* of Linnaeus; others consider it to belong to the *Tenthredo Æthiops* of Fabricius. The investigations of Gorsky, Westwood, and M. Delacour have set the question at rest. They have shown that there are several slug-like grubs, which are developed into insects belonging to distinct species, and that the *T. Cerasi* of Linnaeus does not form its cocoon in the ground, but among the leaves of the Cherry. To Dr. Boisduval's description of this pest we may add that the best remedy is to dust the trees with quicklime as soon as the slimy grub is perceived, and to repeat the dusting as often as may be necessary.—Eds.]

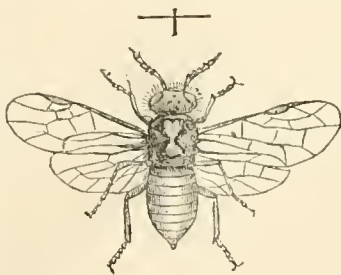


Fig. 2.—*Tenthredo adumbrata* (perfect insect).

LETTERS FROM JAPAN.—No. 2.

Isurumi, Sept. 7th, 1873.

JAPAN is quite an agricultural country, and in the island of Nipon two crops are generally obtained every year. At the end of the month of November or the beginning of December the farmers sow their Barley and Wheat, and these crops are ready to cut in the months of May and June, when the soil is again turned up, and the land flooded for the Rice crop, or prepared for Turnips, &c. The Barley and Wheat are not set so closely as we grow ours in England, the rows being about 12 to 15 inches wide; after the Wheat and Barley plants are about 8 inches high they are earthed-up on both sides. The plough used by the Japanese is made of wood, pointed at the end with a small piece of iron, and is so light that a boy can carry it. It is guided by a single handle only, and is a very primitive affair. The harrow is a piece of wood 3 feet long, filled with iron spikes, and with a handle to it, so placed that the farmer can press the spikes into the ground. After the Barley and Wheat crops are ripe they are cut with a sickle, the same as the Irish labourers formerly used. The crop being carried home, all the heads of grain are pulled off from the straw by passing through a number of iron spikes. The heads are then thrashed with a flail in a similar way to what was formerly the plan in England, after which the corn is separated from the chaff by being exposed to the wind.

The Rice crop is planted in the following way:—After carefully preparing a bed, the Rice is set very thick, the same as Celery is in England, and after it has grown to be about 6 inches from the ground, it is replanted in bunches of about six heads each in the paddy fields, which have all been previously turned up, prepared, and manured for the purpose. The distance between each bunch is about 6 inches. The Rice plant having grown to about 1 foot high, the earth is pressed round each bunch by hand, and all weeds carefully removed. At the end of October or the beginning of November the crop is ready to cut, after which it is thrashed, and the Rice put into straw bags. Turnips, which are grown and used along with Rice by the Japanese for their food, are sown in the months of May and June. They are not the same shape or description as the English Turnip, but are about the size and form of a very large Carrot, only white in colour. Carrots, Potatoes, Peas, Sweet Potatoes, Beans, and Mustard are cultivated in much the same way as we raise them in England. The grass here is very coarse, and sheep will not live on it. The Japanese Government has commenced a large farm in the island of Yesso, which I am informed is very rich soil, but owing to the severe winters in that more northern latitude, only one crop is obtained in the year.

Poultry is extensively reared. We have turkeys, fowls, geese, ducks, and pigeons. The fowls and ducks are very plentiful, and comparatively cheap.

Fruit is very fine and plentiful. It consists of Pears, Apples,

Grapes, Pomegranates, Melons, Peaches, Plums, and Oranges. The latter are of a very rich sweet flavour though small, and do not generally contain many pippins. Your English gardeners would be surprised to see a Japanese orchard, as all the trees are grafted dwarfs, and appear to be heavily laden with fruit—so much so that the branches are supported by bamboo props. I must not forget to mention that the Japanese have one great fault in the gathering of their fruit, and that is they nearly always pull it before it is ripe, and then leave it to ripen afterwards in the house. We consequently do not get the full flavour of their fine Peaches and Plums.—J. TASKER FOSTER.—(By favour of the writer's father, Editor of the Yorkshire Gazette.)

INFLUENCE OF CLIMATE OVER THE STATURE OF PLANTS.

At a meeting of the Academy of Natural Sciences at Philadelphia, Mr. Thomas Meehan remarked that, as botanists well knew, *Quercus prinoides* seldom grew more than 2 feet in height. It was one of the smallest of shrubs. In his collections in Kansas he found Oaks in the vicinity of Leavenworth, which made small trees from 10 to 15 feet high, and with stems from 1 to 2 feet in circumference. He was entirely satisfied that it is identical in every respect but size with the *Q. prinoides* of the eastern States.

Among trees there are few which produce forms as low shrubs; but the *Pinus Banksiana*, in the east but a bush of 5 or 10 feet, grew often 40 feet along the shores of Lake Superior; the *Castanea pumila*, Chinquapin Chestnut, when it gets out of the sands of New Jersey into the clayey soils west of the Delaware, often grew as large as many full-grown Apple trees; while the *Celtis occidentalis*, which in the east is generally but a straggling bush along fence corners, is in Ohio a large spreading tree with an enormous trunk, and in Indiana is as lofty and as graceful as an Elm.

He also exhibited a section of a stem of *Wistaria sinensis*, and called the attention of members to a curious arrangement of the wood and bark. The vertical section showed by the annual rings of wood that it was about twelve years old. After the eighth year's circle there was a layer of bark, and over this layer two more circles of wood. On a portion of the section another layer of bark had formed between the tenth and eleventh years' circles of wood. The bark seemed to be wholly of liber, the cellular matter and external cortical layer of the regular bark appeared to be wanting. A longitudinal section showed where these internal layers of bark extended no further upwards, and at this point there was an evident flow of wood from the interior over and down this layer of enclosed bark.

He remarked that this section of wood was taken from a stem which had been led to support itself in an upright position. When the *Wistaria* is permitted to trail along the ground numerous rootlets are formed along its length. He thought from the appearance of the wood, in the specimen presented, that rootlets had partially formed in these erect stems, pushing through the liber, and then, instead of penetrating entirely through the bark and forming perfect rootlets, they remained within the cellular matter, and descending joined with the regular woody layer in forming an annular course of wood. This explanation was the more plausible, he thought, from the fact that woody stems formed on the ground. Where the rootlets went quite through into the earth the stems were nearly regularly cylindrical; but these upright stems on which rootlets were never seen had an irregular fluted appearance. Of course, this explanation does not accord with the formation of wood in ligneous structures as generally understood; but he could not understand how the appearance presented could have occurred in any other way than as he had supposed.

NEW BOOK.

VAN HOUTTE'S POMONA. *A Descriptive List of Fruits, with numerous Plates; published in English and French. Part I. Pears.* London, 171, Fleet Street, E.C.

The name of Mr. Van Houtte is already well known as a botanical and horticultural author, and now after a long life honourably spent in the service of Flora he has divided his heart with her sister Pomona, and given to the world of horticulture a work which is at once creditable and useful. The *Pomona*, which is gracefully dedicated to Dr. Robert Hogg, is published in an oblong form, and consists of short descriptions

of the fruits cultivated in Mr. Van Houtte's extensive nurseries at Ghent. The varieties here given are the choice sorts which are best worth growing in private gardens, and the letterpress is illustrated with admirably executed coloured figures of most of the leading kinds. There are five sheets of coloured engravings representing fifty varieties, and six sheets in outlines representing thirty-six varieties. There will be a continuation of the work, and other fruits besides Pears will be treated upon.

We heartily commend the work to all lovers of fruit culture.

ROYAL HORTICULTURAL SOCIETY.

JUNE 18TH.

The Show on this occasion was held in the western conservatory corridor, and was of extremely limited extent, no doubt in a great measure owing to exhibitors holding back for the great meeting at Bath.

Prizes were offered by G. F. Wilson, Esq., F.R.S., for collections of Lilies of the character of *L. pardalinum*, *canadense*, &c., also for cut flowers of the same, but no one came forward to claim them.

There were three classes for Fuchsias—namely, classes for six plants from amateurs and nurserymen respectively, and an open class for twelve. There were three groups of six from amateurs, each containing well-bloomed plants. The largest specimens came from Mr. Walker, gardener to H. J. Atkinson, Esq., Gunnersbury House, Acton, but those from Mr. J. Weston, gardener to D. Martineau, Esq., Clapham Park, were the better-bloomed. A lot of very compactly-grown plants from Mr. James, gardener to W. F. Watson, Esq., Isleworth, was in good bloom. Mr. Weston was first, Mr. Walker second, Mr. James third. Of varieties with light corollas, *Puritana* and *Conspicua* were the best; of dark corollas *Enoch Arden*, *Lord Derby*, and *Souvenir de Chiswick*; of white-sepaled kinds *Lucy Mills* and *Mrs. Marshall*. There was no exhibition in the nurserymen's class, and Mr. James was the only exhibitor of twelve, taking a first prize.

For eight Palms, Mr. Bull, Chelsea, was first, and Mr. Aldous, florist, Gloucester Road, South Kensington, second; while for six, Mr. W. Cole, gardener to J. S. Budgett, Esq., Ealing Park, and Mr. J. Fewell, gardener to Mrs. Sargood, Broad Green Lodge, Croydon, took the same relative positions. In these collections we noticed nice specimens of *Geonoma pumila*, *Acanthophaenix crenata*, *Areca lutescens*; and in Mr. Bull's group *Kentia Forsteriana*, *Dæmonorops melanochætes*, and *Verschaffeltia melanochætes*.

The only group of six *Pæonies* in pots came from Mr. R. Parker, Exotic Nursery, Tooting, and well deserved the first prize, which was awarded. Charles Binder and Virginie were remarkably good.

Baskets of plants arranged for effect were shown, and prizes were awarded to Mr. Hepper, gardener, The Elms, Acton; Mr. Aldous, florist, South Kensington; and Mr. Cole, gardener to J. S. Budgett, Esq., Ealing Park. The only stand of *Ranunculuses* came from the Rev. H. H. Dombain, Westwell Vicarage, who had a first prize.

Among miscellaneous subjects Mr. Denning, gardener to Lord Londesborough, Norbiton, had a fine group of Orchids, in which were the charming *Epidendrum crassifolium* with at least a score of spikes, *Dendrobium Bensoniae*, the pretty *Palumbina candida*, *Cattleya Warneri*, splendid; fine *Aërides*, &c. From Mr. Noble, nurseryman, Sunningdale, Bagshot, came a group of the beautiful and elegant crimson-flowered *Spiræa palmata*; from Mr. Smith, Ealing Deane Nursery, a good collection of Balsams; and from Mr. Parker, Tooting, a fine lot of *Pyrethrum*s in pots, cut flowers of the same, and a stand of varieties of the German Iris. For the prizes offered some time ago by Messrs. Barr & Sugden for typical forms of Cabbages, exclusive of Savoy, Mr. Tisdale, Cambridge Lodge, Tooting, exhibited some twenty-seven so-called kinds, not all of which, however, were markedly distinct.

FRUIT COMMITTEE.—Alfred Smee, Esq., F.R.S., in the chair. Mr. J. Edwards, gardener to Lady Prescott, Herne Court, Kent, sent two dishes of Royal George Peaches and two of *Violette Hâtive* Nectarines, which were in splendid condition, and were awarded a cultural commendation. Mr. A. Colbourne, Woolhampton, sent a very fine dish of Pitnastou Orange, which also had a cultural commendation. Mr. Colbourne also sent fruit of the Loquat, which was pronounced the finest in flavour ever submitted to the Committee. Mr. Tillery, of Welbeck Abbey, sent dishes of forced Strawberries—British Queen, Empress Eugénie, and Lucas. Mr. Cadger, gardener to Lord Strafford, Wrotham Park, Barnet, sent a seedling Melon, called Wrotham Park. Mr. J. Gardner, gardener to Col. Astley, Elsham Hall, Brigg, sent a hybrid Melon. Mr. Gilbert, the Gardens, Burgh-

ley, sent a hybrid Melon of an oval shape and yellow skin, with green flesh. The flavour was remarkably rich, and the Committee awarded it a first-class certificate, naming it Gilbert's Green-flesh.

Messrs. Barr & Sugden exhibited three new Lettuces: Wheeler's Kingsholme, Scott's Giant, Dimmock's Victoria, Bunnell's Alexandra, all of which were identical, and the same as a good stock of Paris White Cos; but Mr. Barr stated that he had found these harder than the Paris Cos. Henderson's New American Lettuce, also exhibited by Mr. Barr, was pronounced unworthy of cultivation. The Committee was adjourned to meet on Saturday next, at Chiswick, to examine the early Peas, which are now in pod.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair, Messrs. Rollison, of Tooting, had first-class certificates for erect-flowering *Gloxinia Brilliant*, with magenta-flushed crimson lobes; for Rev. A. H. Bridges, one of the drooping-flowered class, soft rose, much dotted, and veined; Mrs. Fauny Wilders, erect-flowered purple, broadly edged with white. Besides these Messrs. Rollison exhibited many others of considerable merit. To the same firm a first-class certificate was awarded for *Echmea bracteata*, previously shown at the Regent's Park. Mr. Croucher, gardener to J. T. Peacock, Esq., Sudbury House, Hammersmith, sent several new Agaves. Messrs. Backhouse, York, had a cultural commendation for a specimen of *Cyclobothra pulchella*. Mr. Linden, Brussels, had a small collection of new plants, among which were *Phyllotænum Lindenii*, *Curmeria picturata*, *Maranta hieroglyphica*, and *Anthurium crystallinum*, all of which have been recently noticed.

Messrs. Downie, Laird, & Laing sent a stand of Fancy Pansies, of which the following had first-class certificates—viz., *Picotee*, singularly lined; Thomas Granger, dark blotch, rich brown edge and top; Mrs. Neilson, violet, edged with white, very pretty; D. B. Downie; and Richard Dean, dark brown, edged with rich yellow. Messrs. Barr & Sugden, of Covent Garden, had a cultural commendation for a fine basket of Lilies, and exhibited, besides, a collection of *Irises* of different classes, which, though not in good condition owing to the rain, were very interesting. They also sent a violet bedding Pansy, called *Magnifica variegata*, having leaves much variegated with deep yellow.

Mr. R. Dean, Ealing and Bedford, sent remarkably fine spikes of white, purple, and scarlet Intermediate Stocks, also Mauve Beauty, a splendid pyramidal variety, together with a number of his bedding Violas, and some double Canterbury Bells. From H. Shaw, Esq., Highfield, Blackburn, came two fine varieties of *Cattleya Trianaei*.

A CASE OF DISTRESS.

WE earnestly call the attention of our readers to a case of real distress, and solicit their aid in an endeavour to assist those who are quite unable to help themselves. The late Mr. Robert Glendinning, of the Chiswick Nursery, was well known to most people in the horticultural world, and there were few who knew him but would have assisted him in his lifetime. At his death he left, among other members of his family, a poor idiot son, who has for the last seventeen years been an inmate of the asylum at Redhill. During the whole of that time the father, and subsequent to his death the mother, paid the annual charge of £60 for his maintenance. Now the mother is dead, and evil days having come on the family, this poor young man has no one to continue the maintenance for him, and if something be not done he will have to be discharged from the asylum. Some friends of his parents have interested themselves in his behalf, and are endeavouring to have him placed on the foundation, by which he will be maintained free; and we shall be glad if anyone who reads this will regard it as a pressing appeal to their charity, and render all the aid they can to secure at the next election that this poor fellow shall be placed on the foundation. Subscriptions and votes will be thankfully received by Mrs. Bridges, Rupert House, Chiswick, Mr. Francis Dancer, of Little Sutton, Chiswick, or by the Editors of this Journal.

AGE OF TREES.—According to M. Ed. André, the editor of *L'Illustration Horticole*, the following are the ages attained by several kinds of trees. Judas Tree (*Cercis Siliquastrum*), 300 years; Elm (*Ulmus campestris*), 335 years; Ivy (*Hedera Helix*), 450 years; Maple (*Acer campestre*), 516 years; Beech (*Betula alba*), 576 years; Orange (*Citrus Aurantium*), 630 years; Evergreen Cypress (*Cupressus sempervirens*), 800 years; Olive (*Olea europæa*), 800 years; Walnut (*Juglans regia*), 900 years;

Oriental Plane (*Platanus orientalis*), 1000 years; Lime (*Tilia europæa*), 1100 years; Oak (*Quercus robur*), 1500 years; Cedar of Lebanon, 2000 years; *Taxodium distichum*, 3000 years; Yew (*Taxus baccata*), 3200 years. These ages are taken from the concentric annual layers of the oldest trees hitherto observed.

EXTRACTS FROM DR. HOOKER'S REPORT

ON THE ROYAL GARDENS AT KEW, DURING 1872.

(Concluded from page 468.)

INSTRUCTIONS have been received to introduce the Teak into Jamaica, and the West African (Liberian) Coffee into Ceylon, where the ravages of the coffee blight, a minute fungus (*Hemileia vastatrix*), are still very serious.

The cultivation of Tea in Ceylon (upon which a report was called for from Kew a few years ago) is successfully established, and the quality pronounced satisfactory. The Cinchona continues to flourish in the island, and the bark has been pronounced of the best quality.

The Director of the Botanic Garden there is actively promoting the cultivation of Chocolate, for which the climate of the island is admirably suited.

A skilful Superintendent (trained in the Glasnevin Botanic Garden) has been sent out from Kew to the Botanic Garden of Natal, and has taken with him a large collection of economic plants.

A gardener has been sent from Kew to the Embassy Garden at Constantinople, and another as superintendent of the Agricultural Society's Garden at Calcutta.

Under instructions from the Secretary of State for the Colonies a skilled propagator has been sent from Kew to superintend the extension of forest plantations in the Island of Mauritius. Others have been selected for the Tea and Cotton plantations in India.

Dr. Henderson, of the Indian Medical Service, after devoting a year to the study of his Turkestan collections at Kew, has been appointed *locum tenens* at the Royal Botanic Gardens, Calcutta, during the absence in Europe on sick leave of Dr. King, the present Superintendent.

The yield of Cinchona in the Indian plantations is already very large, and the bark has fetched good prices in the English market; the manufacture of quinine has been established in the Nilghiri plantations, and will shortly be commenced in the Sikkim Himalaya.

Among the most valuable presentations to the herbarium are the Rev. C. New's plants, collected on the Alpine zone of Kilimanjaro, the only hitherto visited snow-clad mountain in equatorial Africa, which possesses a remarkable interest, as the flora of the Alpine zone of Africa was previously wholly unknown. A notice of it is being prepared for immediate publication. A fine collection of two thousand Brazilian plants has been received from Mr. Glaziou, Director of public parks, &c., at Rio de Janeiro. A beautiful collection of Appalachian Mosses has been received, with many other plants, from Dr. Gray, of Cambridge, U.S.; and of Mexican and New Caledonian plants from the museum of the Jardin des Plantes, Paris. The very valuable herbarium of Dr. Rottler, made by himself and the early missionaries in India, has been presented by the authorities of King's College; as containing the types of many species imperfectly described by the first Indian botanists, and representing the state of the botany of the peninsula at the beginning of the century, it is of great interest and importance both in a scientific and historical point of view.

A beautiful collection of Burmese Orchids has been presented by the Rev. C. Parish. Dr. Brandis, F.L.S., Conservator of Forests for India, has placed his herbarium, formed in many parts of India, at the disposal of this establishment, to be selected from; together with a collection of Tibetan plants, made by the Rev. Mr. Heyde. Mr. Kurz, Curator of the herbarium of the Calcutta Botanic Garden, has transmitted large Burmese collections made by him during a late mission to that country.

For novelty as well as interest no contributions are of greater value than Beccari's Bornean plants, amounting to 1850 species, communicated by Professor Parlatore, of Florence; M. Maximowicz's Japan plants, a splendid series; Dr. Henderson's collections, made during Forsyth's mission to Yarkand; and Dr. J. Anderson's, made during the expedition to Yunnan, the botany of the two latter countries having previously been wholly unknown to science.

SALES OF ORCHIDS—Mr. Stevens on the 28th of May sold 439 lots for about £500, and 380 lots on the 31st for £400. Amongst the highest purchase bids were £8 15s. for a mass of *Dendrobium Bensoniæ*; £5 15s. for *Cattleya Schilleriana* Regnelli; £5 10s. for *Lælia majalis*; £6 10s. for *Cattleya Mendelii*;

£9 for *Masdevallia Harryana*; and £12 12s. for *Disa grandiflora superba*.

WOODLICE AND WEEDS.

I HAVE tried the plan suggested for trapping these vermin by placing some boiled Potato in a flower pot laid on its side with a little moss, but without the slightest effect. A much better trap is a flower-pot saucer turned upside down, and if smeared inside with a little ordure it will be the more effective. I catch dozens under each early in the morning, and more in the course of the day.

Salt boiled in water and applied direct from the kettle has been recommended for destruction of weeds, which I have found of little avail, and it is, furthermore, an expensive process as compared with hand-picking. A boy at 1s. a-day will get rid of them entirely at a tenth-part of the cost of salt.—J. M. A.

[Manure has nothing to do with the production of either woodlice or slugs. The parents travel to the soils most suited to them, and there breed.—Eds.]

NOTES AND GLEANINGS.

MISS STANLEY, sister of the Dean of Westminster, adopts a novel mode of rewarding those of the deserving poor who come within the sphere of her influence. This estimable lady dispenses what may be called a kind of FLORAL CHARITY, and through the agency of district visitors distributes large quantities of flowers to the poor at their own homes. It would be impossible to find any class of the community who do not take pleasure in the cultivation of flowers, and no one can doubt that, by giving the humbler classes of the people opportunities for employing their time in this direction, Miss Stanley is performing a work of genuine philanthropy. It is only to go into one of the metropolitan parks on a Sunday afternoon in the summer, to be convinced of the enjoyment which the sight of the flower beds creates amongst the immense numbers who congregate there, and it is very rare that an act of wilful damage has to be punished. A suggestion has been made that hospitals have a claim upon public sympathy in this respect, and that, as newspapers and periodicals are supplied to the sick poor, flowers also might be furnished to them. The idea is unquestionably a good one, and it might be worked out so as to relieve the tedium of the dreary hours which many are compelled to spend in our public institutions.—(*Daventry Express*.)

— WE understand that Mr. B. S. Williams, of Holloway, has been intrusted with the FLORAL DECORATIONS at the GUILD-HALL on the occasion of the Shah's visit to the City.

— AMONGST the industries in which soldiers employ their leisure in France, not the least is STRAWBERRY CULTIVATION. At Bagnolet, near Paris, three hundred soldiers from the forts of Rosny and Romainville are daily occupied for six hours in watering the Strawberries. The fruit is picked from each plant eight times in a year, the second gathering taking place four days after the first, the four next at intervals of three days, and the two next in ten days. In a good season the grower gathers at one time five baskets per 100 yards, or six hundred per hectare (a trifle over 2 acres). As each basket is sold at 1s. 3d., the eight gatherings bring in about £260 per hectare. The grower, however, spends £140 on the cultivation of his ground, his clear profit being about £120.—(*Graphic*.)

— At a dinner recently given at Delmonico's in New York, the DINNER-ROOM DECORATIONS consisted of banks of moss brought on purpose from the south, in which masses of flowers of the choicest kinds were placed, "including several hundred yellow Roses which cost one dollar each." Down the centre was a tank full of water, over which was an aviary of song birds, and in the midst of the water two live swans swam about, the whole being adorned with superb flowers, Water Lilies, and Ferns.

THE GOLDEN CHAMPION GRAPE.—I entertain a very high opinion of this Grape, and am sorry to find it has done so badly with Mr. Douglas. With me it has succeeded admirably in an early house, setting well, and resembling in bunch that famous Grape the Bowood Muscat, but larger in berry. My late employer, T. V. Morgan, Esq., considered it one of the finest-flavoured Grapes he had tasted. I remember showing it to Mr. Wills the same season in excellent condition. I

therefore advise my brother gardeners to give it a fair trial before writing in disparagement of what I have reason to consider a most excellent Grape.—THOMAS P. TURNER, *Gardener, Earl of Meath, Killruddery Castle, Co. Wicklow.*

CARICA AURANTIACA.

THROUGHT the kindness of Mr. William Bull, of the King's Road, Chelsea, we are enabled to figure this newly-introduced Papayad. It is described by him as having "stout, fleshy, erect stems, and long-stalked palmately-parted smooth leaves of a soft herbaceous texture, the centre lobe of which is pinatifid; the lobes appear, from the sketches of the plant, to



Carica aurantiaca.

be about $1\frac{1}{2}$ inch broad. The fruit is globose, a little over 3 inches in diameter, orange-coloured, and Orange-like. The plant is free in habit, and of ornamental growth."

What this may prove to be in an economical or in an ornamental point of view we cannot venture to say. The Papaw-tree, so generally cultivated in the East, is also a native of South America, but has dingy orange-coloured fruit of much greater dimensions. In connection with this tree we may mention its property of turning all meat tender; it is even

said, and we believe with truth, that fresh-killed meat placed under its foliage will be similarly affected. Such, at least, has been our experience in India, as well as that of many of our friends; but there, however, the climate does much in the same direction. The Papaw is propagated by seeds in India; and Mr. Speed, in his "Indian Gardener," recommends that the tree should be grown in rich mould, otherwise the fruit will become even more tasteless than it naturally is.

FLOWERS FOR OUR BORDERS.—No. 10.

GRAMMANTHES GENTIANOIDES.—GENTIAN-LIKE GRAMMANTHES.

THE Houseleek tribe includes within its limits so few plants which are not perennial, that the present subject, an annual, has some claim to be regarded as a novelty.

The *Grammanthes gentianoides* is a native of the Cape of Good Hope, and is, we believe, a recent introduction. It grows but a few inches high, and has smooth, rather brittle stems, and blunt, fleshy leaves, like those of most *Crassulaceae* plants. The flowers are of an orange-yellow tint, in terminal clusters, each with five petals, five stamens, and five distinct styles and carpels. The last feature is so eminently charac-

teristic of the plants of this order, that, taken in conjunction with their succulent habit, it affords an easy method of distinguishing them from all other tribes.

The blossoms are remarkable for a dark stain at the base of each lobe of the corolla, and which being continued along the middle of each petal towards its extremity, partially divides the ground colour, so as to give it an appearance which has not been inaptly compared to that of the letter V; and it is in allusion to this circumstance that the genus has been named, from *gamma*, a letter, and *anthos*, a flower.

It is well known that succulents will flourish in a very small amount of soil, and that of the poorest description, and this peculiarity must be borne in mind in the cultivation of the *Grammanthes*. It requires to be sown in spring, in pots of sandy soil, and placed in a moderate hotbed until the young plants are an inch or two high, when, if very thickly placed, they may be transferred to wider pots, but otherwise they may remain in the seed-pot until the weather is sufficiently mild to permit of their removal to the borders. From their limited growth, single specimens of the plant produce but little effect; it is therefore advisable to plant them in patches as large as the supply of plants will admit of, and where the soil is not sandy it must be removed to the depth of 3 or 4 inches, its place being supplied by the poorest material that can be obtained. As a further precaution against excess of moisture, a thin tile may be placed beneath this stratum of earth, and the surface of the ground covered with small pebbles. The plant is, however, better suited to the rockery than for the border, as in wet seasons it is liable to rot, notwithstanding any precaution that may be taken.



Grammanthes gentianoides.

It must be remembered, that in the dry climate of the Cape but little rain falls during several months of the year, and that the aridity both of the atmosphere and soil is further augmented by a temperature considerably higher than that we enjoy in this country. Upon rockwork the plant is certainly less exposed to the evils arising from a rich soil; but the atmospheric humidity not uncommon with us even in the summer season, is not so easily guarded against. The nearest approximation to the native climate of the *Grammanthes* would, perhaps, be found in the greenhouse or a warm south window, where we have found it succeed very well; in any case, however, the blossoms will only expand in bright weather. Their tint varies considerably in depth, even on the same plant; those which have been the longest expanded are generally much darker, and there is a variety with paler flowers.

We believe the present species to be identical with one published under the name of *chlorofoelia*, for the supposed differences are quite inappreciable. The old *Crassula retroflexa* is now added to this genus.

The least attentive observer cannot fail to be struck, in a survey of the vegetable kingdom, with the wonderful adaptation of the various organs of the different tribes of plants to the situations in which they are usually found.

If we at this time confine our observations to the leaves of plants, we find that those species which are natives of moist climates or soils, and which consequently imbibe by their roots a considerable amount of fluid, are furnished with leaves, the cuticle of which is set with innumerable pores or stomata—as they are termed in botanical parlance—through which the redundant juices of the plant are exhaled into the atmosphere whence they were originally derived; whilst in those plants

which are parasitical, like the Mistletoe, or which are natives of the sandy districts of warm climates, as in the case of many of those comprised in the orders *Crassulaceæ* and *Cactaceæ*, these breathing apertures are in direct proportion to the small volume of root-nutrient absorbed by the plant, and are therefore few in number. Of these plants Lindley has well observed, that “soil is to them a something to keep them stationary, rather than a source of nutriment,” which is obtained chiefly from the surrounding atmosphere; for not only does the peculiar structure of their cuticle enable them to retain for a lengthened period their fluid contents, but they appear to possess the faculty of absorbing, through its agency, the heavy dews by which, in tropical climates, the absence of the rain of more temperate regions is supplied.—(W. Thompson's *English Flower Garden*.)

GLORIOSAS.

WHAT more beautiful plants than these can be had for the decoration of pillars and rafters of the stove or intermediate house during the summer and early autumn months? and yet they are very rarely to be found in either large or small gardens throughout the country. This arises in some instances from utter ignorance, not only of the beauty of the various kinds, but from total ignorance of their existence; on the other hand, I have found both amateurs and gardeners shrink from attempting their culture, believing them to be difficult to grow and shy to bloom. This is a state of things which should not exist, and therefore, for the benefit of those of my readers who are labouring under the latter impression, allow me to say that my own experience with these plants has proved them neither difficult to grow nor shy to flower, but that a fine display may be obtained from them with ordinary care.

I am quite at a loss to understand why these plants have been so thoroughly neglected by gardeners, for not only are they beautiful objects for home decoration, but when trained upon a wire balloon-shaped trellis they produce a magnificent effect upon the exhibition table, and therefore they cannot be considered suitable for a certain class alone, but may be grown and prove equally useful in the large as in the small garden.

The finger-like tubers of these plants have a central crown, which should be examined as to its soundness before potting in the blooming pot, when, if perfect, they should be placed, either in pairs or singly, 2 or 3 inches below the surface of the soil, with the crown uppermost. I am particular in saying the blooming pots, for this system I have found by experience much the best, because when first placed in small pots and subjected to several shifts, some injury would invariably accrue, their scandent stems and tendril-bearing leaves being extremely inconvenient to the operator, and peculiarly liable to damage. I have, therefore, adopted the method of planting in large pots at the first potting, and have been very successful with them under this treatment. The blooming pots for *Gloriosas* should be about 13 inches in diameter. These, if properly drained, will be sufficiently large, and the soil will not become sour or stagnant during the whole season. For compost use one part good turfy loam, one part of fibrous peat, one of good rough leaf mould well decayed, and one of well-decomposed manure. Add to this one part of silver or sharp river sand, and then thoroughly mix, but on no account let a sieve be brought into use, for nothing is so baneful in the hands of the amateur as a sieve to make the soil fine.

After potting, the tubers should be started in gentle bottom heat, but when the growths are some 18 inches long this, if inconvenient, may be dispensed with; they may then be placed upon the pillar or rafter, or upon a wire trellis if this style of culture has been determined upon. If a stock of these tubers is in hand, it will be preferable to keep some of them back until April and May, when a succession of grand flowers will be obtained for several months. During the growing season *Gloriosas* enjoy liberal supplies of water at their roots, and an occasional application of weak liquid manure will be found very beneficial; but the syringe, although used frequently, must be handled carefully, and the water discharged from it lightly, otherwise the leaves will be much bruised and broken, and thus the general appearance of the plants damaged.

The blooming season past, water must be gradually withheld, but do not entirely cease to water them until the stems have completely decayed, for if the tubers are prematurely put to rest their strength will be deteriorated, and the quality and quantity of the flowers the next season will be correspondingly less.

While upon this subject I may just add that in too many instances the starving system in connection with summer-flowering bulbous plants has done more to bring them into bad repute with amateurs than any other thing. By the starving system I mean the total neglect of these plants after their beauty is past; like many plants, they require just at that time particular attention in order to enable them to finish their growth in good condition. The reverse of this treatment leads to the formation of weak tubers, which produce but few flowers the next season, and then we often hear the remark, "Yes, those plants did very well with me the first year, but I never was able to manage them satisfactorily afterwards." Therefore, referring specially to the treatment of *Gloriosas*, I would say, Do not neglect or entirely refrain from watering until the stems have quite decayed, then remove them to a cool place, and keep them dry until required the following spring.

G. SUPERBA.—This fine plant ought to be familiar to all plant-growers, for it is considerably over a century and a half since its introduction to what were then called our bark stoves. It attains a height of 8 or 9 feet, and is subjected to the treatment above detailed, but it must be grown in the stove. The stems and leaves are smooth, shining, pale light green; the leaves are ovate-lanceolate in shape, the apex being lengthened-out into a long spiral tendril, which clings firmly to anything with which it may come in contact. The flowers are produced from the axils of the leaves; petals six in number, narrow-lanceolate, undulate, crispate at the margins, and measuring about 3 inches in length. In young flowers the petals are straight, but when fully expanded they reflex until they stand almost erect, with their points nearly touching. The colour is rich orange red, and the appearance of dozens of these large gaudy flowers must be seen to be fully appreciated. Native of the East Indies.

G. GRANDIFLORA.—In general habit this species resembles the preceding; it is, however, a much stronger-growing plant, and is perfectly distinct in colour. Well do I remember the delight which I experienced on blooming this species for the first time after its introduction to England, for I had tended it diligently under the conviction that it was a new kind. It is a robust and vigorous grower, attaining a height of from 10 to 12 feet. The leaves are sessile, ovate-lanceolate in shape, terminating in a long tendril, and pale green in colour. As with *G. superba*, the flowers are six-petaled, and like it also they become reflexed when mature; the petals are lanceolate, about 4 inches long, and vary from pale sulphur to rich golden yellow in colour. It succeeds best in the stove, but, like the first-named kind, it will thrive admirably in an intermediate house, and lasts nearly three months in beauty. Native of Western Tropical Africa.

G. VIRESCENS PLANTIL.—For an intermediate house early in summer, or a snug place in the greenhouse later in the season, few plants are more showy and attractive than the kind above-named. It attains a height of about 8 feet; leaves oblong-lanceolate, with a short terminal tendril; flowers axillary, six-petaled, and spatulate in shape, differing, however, from *G. superba* in the plain, not crispate margins. The lower half of the petals is bright rich yellow, the upper portion bright red tinged with orange. The blooms last long in full beauty, and if attention be paid to potting the tubers successively, their brilliant flowers may be enjoyed for four or five months during the summer and autumn. It is to be found in some gardens under the name of *G. Leopoldiana*. Native of Natal and various parts of South Africa.—**EXPERTO CREDE.**

HARDY PERENNIALS.—No. 1.

THE practice now so extensively adopted of filling entire compartments of the flower garden during summer with plants not long since regarded as occupants of the greenhouse exclusively, has no doubt imparted to the parterre a brilliancy not hitherto attainable.

We have no objections to urge against planting in masses, or, as it is usually termed, the "hedding system;" on the contrary, we freely admit that very striking effects are thus produced, and where the extent of ground permits it we see no reason why every variety of plant employed for ornamental purposes, whether annual or perennial, should not be disposed in clumps or heds. But it is obvious that for gardens of small extent this system of planting is entirely inappropriate, unless, indeed, one could be content with a very few distinct species, which very rarely happens. The preservation, too, of hedding

plants—at least of those of a tender character—during the winter months involves some little trouble; and their increase in spring is hardly to be effected without the aid of a hotbed, especially when any quantity is required.

Now, without going so far as to affirm that it is desirable to exclude all plants incapable of supporting without injury an English winter—an opinion in which but few persons would concur—we have no hesitation in saying that the number of strictly hardy subjects is so great, that no difficulty whatever would be found in filling with them a garden of considerable extent, without the assistance of any plants requiring winter protection, or only so much as could easily be afforded without removing them from the soil.

We think it highly probable that a reference to the best of these will be acceptable to those amateurs who, although ardent lovers of *Flora's* beauties, have too little time at their disposal to enable them to devote the requisite attention to the more tender class of plants.

As our starting point, we may take the *Ranunculus* tribe, usually placed first in botanical arrangements, and equally entitled to a prominent position in an ornamental point of view. The most showy plants of this order are the *Columbines* (*Aquilegia*), the perennial *Larkspurs* (*Delphinium*), and the various species of *Clematis*; the first two especially merit the attention of the amateur. The finest of the *Aquilegias* are alpina, with magnificent blue flowers 3 inches across; *Skinneri*, *juunda*, *glandulosa*, *leptoceras*, and *fragrans*, the last with sweet-scented pale yellow blossoms; the varieties of the common *A. vulgaris* are also many of them very ornamental.

The genus *Delphinium* comprises some of our most beautiful herbaceous plants, and the species are very numerous; no garden should be without *Barlowii*, *Iveryanum*, *Wheeleri*, and *Hendersoni*; many of the older species are very ornamental, especially *grandiflorum*, *elatum*, the common *Bee Larkspur*, and *azureum*.

Most of the species of *Clematis* are climbers, but there is one of dwarf herbaceous habit which merits a place in the mixed borders, the *C. tubulosa* from Mongolia. The other species, would, perhaps, be more properly noticed under a different head.

Among the fibrous-rooted *Anemones* there are several very pretty plants; the *A. narcissiflora*, *A. nivalis*, *A. Pulsatilla*, and *A. japonica*, are of this number. Of the tuberous roots, in addition to the beautiful *A. coronaria* and *A. hortensis*, which are too well esteemed to need further recommendation, we may mention *palmata* and *apennina*; the last has been classed as an indigenous species, but erroneously. Several other selections may be made from this order, such as the *Adonis vernalis*, and all the perennial species of this genus; that named is, however, the only one readily procurable: its large bright yellow flowers make it an object of much interest in early spring. The *Thalictrum aquilegifolium* and several other species of *Meadow Rue* may also be admitted, without hesitation, to the back row of the borders, where their tassel-like flowers and fine foliage produce a good effect; and the *Globe-flowers* (*Trollius*) have recently received an accession to their number from China, which will prove of some value as a hardy ornamental perennial.

We must not, however, linger over this group of plants, but pass on to the *Poppyworts*, in which the *Oriental Poppy* (*P. orientale*), the *Bracted Poppy* (*P. bracteatum*), and the *Norway Poppy* (*P. nudicaule*), claim our notice; and the *Argemone grandiflora*, which, although often treated as an annual, is of perennial duration, and in our opinion is entitled to special mention; it requires, however, to be kept within bounds.

In the *Fumeworts* we have a group limited in extent, but highly interesting from its including the beautiful *Dielytra spectabilis*. Most of the species of *Corydalis* are very ornamental, and every collection of hardy plants should include such species as *nobilis*, *fabacea*, and *hulbosa*.

The *Violet* tribe it will be sufficient to name; but although everybody cultivates the charming *Viola odorata*, and its more gaudy sister, the *Pansy*, the other species, many of which are very interesting, are only rarely seen. The *V. pedata* is a pretty plant, with large purple flowers; those of *lanceolata* are white; *pennsylvanica*, *palmata*, and *primulifolia*, are also species of some interest, and all three may be had of some of the London florists; we have seen them in the catalogue of Messrs. Low & Co., of Clapton.

The *Cruciferous* plants are far more numerous than the preceding, but comparatively few of them can be said to be really

ornamental, if we except the double-flowered Rockets (*Hesperis*), the Wallflowers, and different species of Stock (*Matthiola*). The *Alyssum saxatile*, so appropriately named by our Gallic neighbours Corbeille d'or, from the mass of golden flowers it presents in spring; the *Aubrietia purpurea* and *A. deltoidea*, both with purple blossoms; the very pretty Calabrian *Arabis* (*A. rosea*), and some of the *Dentarias*, are the principal ones which suggest themselves, and they are all worth cultivation. The genus *Ethionema* contains a few plants of some beauty; the best species is perhaps *coridifolium*, from Mount Lebanon, but the others may also be grown.

The *Dianthus* tribe, *Caryophyllaceæ*, needs no recommendation, including as it does some of our most esteemed florists' flowers; not a twentieth part, however, of the plants comprised in this order are in general cultivation, which is the more to be regretted, as the whole are hardy, of dwarf habit, and abundant flowerers. We may cite the *Dianthus Fischei*, *latifolius*, *giganteus*, *Libanotis*, *lusitanicus*, *Balsii*, *carthusianorum*, and *Hendersonii*; the beautiful little *Saponaria ocyroides*; the *Silene Schafta*, *fimbriata*, *acaulis*, *alpestris*, and *speciosa*; *Gypsophila pauciculata* and *perfoliata*; and *Lychnis fulgens*, *coronata*, and *Bungeana*, as a few of the most interesting border plants, and nearly all of them are excellent for the rockery.

The Flax family is chiefly represented in our gardens by the old *Linum flavum*, a very gay little evergreen; but the genus contains at least twenty other species equally deserving of notice, among which we may mention the New Zealand Flax, *L. monogynum*, white; *arborescens*, *maritimum*, and *campanulatum*, yellow; *suffruticosum* and *tenuifolium*, pink; *marboense*, *austriacum*, *alpinum*, *montanum*, and *hirsutum*, blue; and lastly, *ascyridifolium*, with very handsome large blue and white blossoms.

A few of the hardy species of *Geranium* and *Erodium* are sufficiently showy to be admitted into the borders; of the first genus, *anemonefolium*, *ibericum*, *argenteum*, *macrorhizon*, and *Wallichianum*, are the best; and of the *Erodiums*, *serotinum*, *hymeuodes*, *crassifolium*, and *Reichardii*.

The Mallows tribe includes some highly ornamental subjects. The *Hibiscus roseus* and *H. Moscheutos* are both splendid plants, though a moist situation is indispensable, as they are natives of swampy districts. They will succeed admirably by the margin of a piece of water. The old genus *Nuttallia*, now incorporated with the true Mallows, has a few hardy species, though they are somewhat rare in this country; *digitata*, *papaveracea*, and *pedata*, are all beautiful, but the last is the only species commonly kept by florists; the *N. grandiflora* requires some protection. The *Malva Morenii* and *M. Monroeana* are also herbaceous perennials of some merit.—(W. THOMPSON'S *English Flower Garden*.)

PACKING AND TRANSMISSION OF PLANTS, CUTTINGS, BULBS, AND SEEDS, TO DISTANT COUNTRIES.

THERE was a time when many enthusiasts supposed that cuttings, stopped at each end with sealing-wax, and then put in a jar securely corked, would traverse the globe in a vital condition; but I am a suffering witness to the truth, and in my experience of such "home presents," found their only value in dry sticks to light my hearth! Undoubtedly, for a few days' sea voyage or land journey the plan may succeed, but as I know of so many better modes of preservation, I shall never require it. Next came the Potato dodge—to wit, each end of a cutting is inserted in one of those tubers, and the bundle is made up together in a wrapper of wax cloth or paper—not inferior to the last method, but the same remarks will apply thereto. Strange to say, the primitive Hindoo was the prime discoverer of the proper *modus operandi* in packing tender cuttings, and to his intuitive simplicity I am heavily indebted for a large portion of the floral treasures I collected and had the pleasure of transmitting during my long sojourn in the East and other quarters. Herewith a slight description of the green idea. Having tied your various cuttings up in lots, and all of as nearly the same length as possible, proceed to cut down that very ubiquitous tree, a "Banana." Say your cuttings are 18 inches long, you will require a case of 2 feet; you therefore chop off a thick portion of the above length, and, next with your axe, split it lengthways and remove the fleshy bark, set like the coats of an Onion, layer upon layer. With in this case you tightly pack your cutting, securing the two halves of the Banana stems with ties of bark or twine; then you make a stopper for each end of the same substance, and

dipping them first in moist clay, drive them in, and cut them off quite even with your box. The package should then be sewn-up in stout wax cloth, bearing the direction, destination, &c. I will now give two satisfactory instances of its merits. A friend at a distance of some hundred miles, who had promised me some choice Chinese *Chrysanthemums*, was requested by me to pack them as above—the season being very hot. He despatched them by transport waggon, but by some accident the address had been defaced and the package subsided among "lost goods." After several weeks' delay and much correspondence, the same was duly forwarded to me, and I opened the case rather anxiously—but what was my surprise to see the plants all alive, and more than one with newly-formed roots.

Again, I was on a tour in the North-west Himalayas, and coming across a superb specimen of the great Climbing Rose in the old garden of a ruined palace, I set to work, and soon packed myself a collection of cuttings thereof in a Banana box; this I carried about with me in all manner of climates and temperatures for about five months. When I descended to the plains of India two cuttings were alive, and I subsequently saw one of these growing in the garden of the friend for whom I carried them. I strongly recommend the importation of this invaluable article from the West Indies. I believe horticulturists will prize it highly, especially the dealers in tender exotics. This pithy porous article is cold as ice, strong and elastic as leather, and moist and juicy as a Cabbage leaf—the great virtues in a plant-envelope. I will now give an illustration of another substance I used, under particular circumstances, with similar success. When sojourning in the North-east Himalayæ (the Upper Burrampooter region), the humidity of the air may be conceived when I state the annual rainfall may be counted in hundreds of inches (excepting Terra del Fuego, the greatest on the earth). Here I found green Bamboo, for the above reason, vastly superior to Banana; almost equally cool, more capacious, and with far less tendency to become mouldy during a very long river voyage to Calcutta. Such are the dimensions of *Bambusa* in those remote wildernesses, that milk buckets are constructed of one joint by the native herdsmen. I have since bethought me of imitating the cool porous humidity of these natural plant-cases, substituting a long box of sheet cork, thickly varnished outside with gutta percha and pitch (two parts of the latter to one part of the former), this case to be lined with spongio-piline; succulents to be packed therein in dry charcoal dust; all other plants or cuttings to be previously wrapped in strips of linen moistened with distilled water, and the spongio-piline similarly damped. This answers well for long voyages. The following modes of conveyance to the most distant countries have all been attended with success, but there are obstacles to their general employment.

1. The bundle of cuttings, being packed air-tight and water-tight in sheet indiarubber, is immersed in a ship's water-tank.
2. Packed similarly, they are stowed in the ship's ice-room.
3. Enwrapped in several folds of wax-cloth, and then dipped several times in a liquefied mixture of soap and wax till densely covered, these many coats can be afterwards pressed with the hand into a dense mass.

The beautiful *Lilium giganteum* of the Himalayas was long in being introduced into Europe; the bulbs invariably failed, until Dr. Royle hit upon the soap-and-wax process. Collodion for healing the points or ends of cuttings is also a modern practice to prevent "bleeding" and exclude air.

There is a valuable substance in use throughout the N.W. Himalayan Alps for roofing dwellings and granaries—i. e., Birch bark; this tough pliable product I found far superior to any kind of paper or cloth as a wrapper. The plant-collector spreads a quantity of fresh damp moss on one of these sheets, and rolls the whole up tightly, using ties to secure the parcel; his bundles are then stowed into a "kilita," or long basket, carried endways with a strap, on the back of a sturdy mountaineer.—Ros.—(*English Mechanic*.)

[A piece of a branch of a sappy growing tree might be employed instead of the Banana stem.—Ens.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE should be taken of the present showery weather to prick-out young Celery and seedlings of the Cabbage tribe in nursery beds, and to transplant the strongest plants of early sowings into their proper places. Make another sowing of *Broad Beans*, but previous to doing so soak the seed in water,

and water the drills; pinch-off the tops of those that are forming their pods. The seed beds of the late crops of *Broccoli* must be kept watered, as must also plants that have lately been pricked out. The *Cucumber* plants will require a good supply of water two or three times a-week. Sprinkle them every afternoon, which will greatly refresh them; keep them shaded during the middle of the day. Make a good sowing of *Kidney Beans* for the autumn; water the drills previous to planting them. Sow some of the quick-bearing kinds of *Peas* for autumn use. Steep the seed, and water the drills as for Beans. Continue to stick the advancing crops. Make a sowing of *Radishes* for succession; if the weather is dry water the ground immediately after sowing, and lay mats over it to prevent as much as possible evaporation. A sowing of *Scarlet Runners* may yet be made to come-in late in the autumn. Stick the advancing crops. It will be necessary to water the late sowings of *Turnips*, and every time after doing so sprinkle them with dust of any kind to prevent the ravages of the fly. Another sowing should now be made.

FRUIT GARDEN.

The important operation of disbudding wall trees is one to which particular attention must now be paid. In carrying out this operation care must be taken to avoid an indiscriminate application of the principle. For example, Peaches and Nectarines when finally disbudded will require to have every shoot removed which is not required for the following year's fruiting. Apricots and Plums, on the contrary, being much disposed to bear on short spurs, will only require to be deprived of their foreright and gross shoots, leaving the rest to grow until they become somewhat firm, when they should be shortened to about an inch from the main stems, taking care, of course, to retain a sufficient number of young shoots to fill-up vacancies and increase the size of the trees. The same rule, with very slight exceptions according to the sorts, will apply to Cherries. Disbud Figs, retaining no more wood than is required for next season. Be sure to select the short-jointed shoots. Pay attention to Vines on walls. Keep the shoots regulated, as it is impossible for them to produce good fruit. Water Strawberries to cause them to swell-off their fruit. Keep insects in check by means of heavy syringings, both with tobacco water and ordinary water. Insects, which usually make their appearance on the ends of the shoots of Cherry trees, should be destroyed by dipping them in tobacco water or a thin puddle of clay and water. For mildew dust with flowers of sulphur, just wetting the leaves to make the sulphur adhere to them.

FLOWER GARDEN.

Cuttings of Roses, where they can be procured, may now be taken, and planted in a close cold frame in a northern aspect. In about a month they will have shown a disposition to strike root, when they may be taken up, carefully potted, and plunged in a slight bottom heat. Treated thus, they will make nice plants in a short time, and if kept under slight protection during winter will fill their pots with roots, and be ready for planting-out next May. Pink pipings put in early will soon be ready for transplanting. If the situation ultimately intended for them is vacant, they may indeed be planted there at once, but if occupied at present by something else, let the young Pinks be planted 4 inches apart on reserved beds in an open situation, the soil of which should consist chiefly of light loam, to which may be added some charcoal dust or charred refuse. The rotten manure from an old Mushroom bed answers very well for Pinks, as it encourages a mass of fibres, and produces a healthy but not over-gross development of top. As regards bedding plants, some memoranda respecting their arrangement next season should be made as soon as they come into bloom. Of the flower garden a rough plan should be made, the beds on which should be numbered, so as to correspond with an accompanying list of plants with which it may be intended to fill them, and along with this should be the quantity required for each bed. In this way accurate information is at once obtained of the number of plants which must be propagated by cuttings and seed in the spring. Whilst half-hardy plants are in full beauty, a tasteful eye will soon discover the weak and improveable points, and by closely observing the more satisfactory part, will readily perceive the most desirable future arrangement. Auricula and Polyanthus seed will now be getting ripe; as soon as the capsules assume a brown colour, and give indications of opening, dry them well, and put them in small tin boxes. Put a glass shade over the seed-vessels of Tulips which are intended to be saved, to prevent the wet lodging in the apex. Those bulbs, the leaves of which have suffered from canker or have sustained injury from early frost, may be taken up, as they are apt to mildew if allowed to remain in the ground too long. Carefully shade those Ranunculuses intended for exhibition; semi-doubles for impregnation must not be covered, as the sun and air are essential in the process of fecundation. Water the paths about the beds so as to make the surrounding atmosphere as moist as possible. Continue to tie Carnations with soft worsted, examine those previously fastened, and mind that the tie is sufficiently loose on the stick to allow the stem to elongate. Thin out the

buds; the crown or topmost bud usually produces the largest and best bloom. If the plant is strong, reserve five; on the contrary, three are sufficient if the plant is weak.

GREENHOUSE AND CONSERVATORY.

Now is the time to encourage rapid and sturdy growth in young *Correas*, *Epacris*, *Pimeleas*, *Chorozemas*, *Leschenaultias*, *Polygalas*, *Heaths*, &c. A constant stopping of gross shoots will be necessary in order to equalise the distribution of sap and encourage the lower parts of the plant to develop themselves. Let shifting, if necessary, be done early, in order that the pots may be well filled with roots before the approach of winter. A compost consisting of three parts fibrous peat in a lumpy state, one part free turfy loam, and a little silver sand, will suit most kinds of half-hardy plants, with the exception of *Heaths*, which succeed best in peat without any admixture, except that of a little silver sand. In potting, take care to secure thorough drainage. The crocks should be carefully placed to provide various outlets for the water, these again should be protected by a smaller size of pounded crocks and charcoal, and finally the rough of the compost should be selected to place the ball on. Attend to plants for autumn and early winter decoration, such as *Scarlet Geraniums*, *Japan Lilies*, *scarlet Salvias*, *tree Carnations*, and *Chrysanthemums*. Give them plenty of pot-room, good rich compost, a moist atmosphere, and plenty of space for the development of their branches and leaves.

STOVE.

Let shading be used with caution, especially when the weather is in any way dull, for, as some plants will soon be ripening their young wood, they merit as much light, and even moderate sunshine, as possible. In the case of *Orchids* this is especially necessary, in order that the young leaves and pseudo-bulbs may be thoroughly matured. Plants pushed early into growth should be removed forthwith to a cool house, and care taken not to induce them to break again, as a fresh start would interfere with their flowering next year. *Dendrobium nobile* and others of that class sufficiently advanced should also be removed to a house where they can have a moderate and steady temperature, abundance of air, and little water, till their stems are ripe and their flower-buds formed. *Orchids* which are still in a growing state should be placed in the most favourable positions, and encouraged by a suitable temperature for ripening and hardening any growths which they may yet make. Let every endeavour be made to secure thorough freedom from insects, which about this season are unusually active, and require constant looking after.—W. KEANE.

DOINGS OF THE LAST WEEK.

We are now experiencing something like summer; although it has not been hot weather, the thermometer only ranging about a maximum of 70° in the shade, it is moderately warm at night. Kitchen-garden crops are looking well, and all sorts of fruit promise to be abundant. Small fruit trees are loaded with the weight of the crops. Pears and Plums suffered a little from the frost when in flower, but there are plenty left for a crop. Apples on the young pyramid trees are in many cases clustering together like ropes of Onions.

KITCHEN GARDEN.

Here all green crops would be benefited by a soaking of rain, or a thorough watering artificially, but this we can seldom do with our stock of fruit trees and pot plants to attend to. Having had experience of the crops suffering during hot dry summers, preparation is made by deep trenching in winter, and digging-in plenty of good manure. When any of the crops show signs of distress from drought, and an opportunity offers, we give a good soaking, and mulch the ground with some decayed manure to prevent evaporation.

We are now using *Myatt's Prolific Ashleaf Potatoes* from the open border; they have not been protected in any way. *Veitch's Perfection* is nothing behind them, it is a very good first-early round. To succeed these, *Dalmahoy's*, second-early round, were planted on a south border with a good slope to the sun; they were not earthed-up, which will cause the tubers to mature more rapidly.

Of four sorts of early *Peas* sown together—viz., *Taber's Early Perfection*, *Laxton's Alpha* and *William I.*, and *Eastes' Kentish Invicta*, there is but little difference in the time of the pods being ready to pick. *Laxton's Alpha* is certainly to be preferred, as it is superior as regards flavour. *William I.* was sown for comparison, and as we only had a small quantity it was sown somewhat thinly, consequently there is only about half a crop; the pods are long and fine-looking; it will be valuable for those who require early sorts for exhibition.

There are now plenty of fine *Canliflowers*. We have tried a goodly number of different sorts, but still adhere to the *Early London* and *Walchren*. Although we have had little rain, the weather being cold, weeds are not easily killed. A few days being hot and dry, we kept the hoe at work; it always pays to keep ground clean.

We have been, and are now, going over all the pyramid and bush fruit trees, cutting the young wood back to three leaves, and cutting the shoots out entirely where they are too thickly placed. Where the trees are intended to increase in size the shoots are left much longer, but are stopped at this time to form a second growth. We find a small maggot devouring the pith of the young shoots, which causes them to die above the place. A sharp look-out is kept for them, and the maggots are destroyed at once. It is very annoying when they attack the leading shoots of wall trees. We hear of Black Prince Strawberry being picked in the open air in this neighbourhood; our own are not changing colour yet. We are placing sprays of Elm round the plants, and the fruit is allowed to hang over from the clefts of the branchlets.

FRUIT AND FORCING HOUSES.

Pine Apples are now requiring attention. The plants intended for winter-fruiting have very nearly made their growth, and the house requires more air and less moisture in the atmosphere. Charlotte Rothschild and Smooth-leaved Cayenne are the best Pines for winter. A few Black Jamaica may be grown; it is a richly-flavoured sort, but very small. For one sort we would unhesitatingly recommend the Smooth-leaved Cayenne. The Queen is the best for summer fruiting.

Vinerias.—We have finished the thinning in late houses, and stopped all lateral growths, training the shoots so that the roof may be equally covered with foliage without being crowded. After this not so much attention will be required, as while the fruit is swelling few lateral growths are made. The houses require to be damped with a syringe or water-pot with a fine rose three or four times a-day, and plenty of water to the roots is essential. Airing the houses early in the morning, and leaving a small chink for air all night when it is not too cold outside, will induce a healthy growth, which will the more effectually resist the attacks of red spider and mildew. Sulphur applied to the hot-water pipes, if properly managed, will destroy either.

Melon and Cucumber Houses.—Since we were careful not to use water which could by any means contain coppers, the Melons have succeeded very well. No more plants have died-off, and the fruit is ripening well. As previously stated, the plants are trained to wire trellises overhead, consequently the fruit requires to be supported in some way before it ripens. We have boards about 9 inches square cut out of half-inch deal; a small hole is made at each corner, to which pieces of wire are affixed, and a hook at the other end of the wire serves to fix the board to the trellis in a way that the end of the fruit just rests upon the board. We get highly flavoured fruit even in dull weather by keeping up a good supply of heat from the pipes, ventilating freely by day, and leaving a little air on all night. Cucumbers are kept perfectly free from thrips by fumigating with tobacco, and syringing freely with clean rain water acts as a deterrent to red spider. We have no trouble with fresh plantations, as the same plants continue to produce abundantly, and remain in perfect health for twelve months. The surface of the beds requires to be dressed with decayed manure mixed with an equal portion of good loam once in two months. After a somewhat lengthened experience with Cucumbers and Melons in well-constructed houses, we should not like to have anything more to do with dung beds; they are not nearly so certain as houses and six times the trouble, besides the unsightly appearance of the beds at all times.

ORCHARD HOUSE.

We have had much trouble with mildew on the Strawberries this year, and many of the unripened fruits have damped-off. The season has been dull and cold, but it is necessary to syringe the fruit trees, which causes a moist atmosphere. Even if much care has been taken not to wet the fruit, the moisture is injurious. A few Plum trees in the house had become infested with aphides; these have been washed off, or destroyed by dusting with Scotch snuff. We would have the house fumigated with tobacco smoke were it not for the ripe and ripening Strawberries. The fumes utterly spoil the flavour of the fruit, and it is not convenient to carry them out while the operation is being performed. We looked over the trees, and pinched back any growing shoots requiring to be stopped; and where the crops are still too heavy the fruit was thinned out. It is very bad management to allow too many fruit to remain on the trees.

CONSERVATORY AND PLANT STOVE.

In the stove we keep up a good supply of heat and moisture; this is injurious to plants in flower, but it is essential to Orchids and other plants making their growth. We should like an intermediate house for stove plants and exotic Orchids in flower. Where these could be arranged with choice Palms, Ferns, &c., a fine effect would be produced, and the plants in flower would last much longer, and they would also be in a place where they could be admired. Training and thinning-out the young growing shoots of climbers, and potting such plants as require it. Everything in the conservatory is kept clean; all dead and decaying leaves and flowers are removed as soon as they are perceived, and seed-pods are picked-off Azaleas as soon as the flowers are faded.

FLOWER GARDEN.

The bedding plants are growing freely and require attention. Verbenas and plants of that description are being pegged-down; this should be attended to without delay, as it not only prevents the plants from being broken by the wind, but they grow more freely after being pegged-down. We have been thinning the flowers on Rose bushes where they are too much crowded. Our bloom is stronger this year than usual, and the plants are free from fly, nor have they suffered much from the attacks of the hudd-worm. Double Primroses have been well attended to in regard to watering, as, if they are neglected at this time, they die-off altogether. Red spider also attacks the under sides of the leaves; it can be removed by syringing underneath.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

Ant. Roozen & Son, Overveen, near Haarlem, Holland.—*Catalogue of Hyacinths, Tulips, Crocuses, and all other Dutch and Cape Bulbs, &c.* 1873.

James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea.—*Catalogue of New and Beautiful Plants for 1873.*

TO CORRESPONDENTS.

* * We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (A. B.).—"Kitchen Gardening for the Many," free by post from our office for 5d. (J. P.).—Rivers's "Orchard House" may be had from the author for forty-two stamps, Messrs. Longmans, 39, Paternoster Row, London, or through any bookseller.

COVENT GARDEN MARKET (I. W.).—Write to Messrs. Webber & Co., Central Avenue, Covent Garden Market. Of early Strawberries Black Prince, Keens' Seedling, and Eclipse would do for market.

PURPLE BORECOLE (Heysham).—It is very richly curled, and consequently is superior for garnishing. The curled leaflets along the ribs are in the manner of the Cockscomb Borecole.

RETARDING COCKSCOMBS (J. G.).—After the comb is full-sized it will retain its beauty and be fit for exhibition for three or four weeks, sometimes six weeks. The plant should be kept near the glass and shaded from bright sun—temperature at night 55°. Cockscombs are best kept in a cool pit. If the plant is healthy and clean the foliage will remain in good condition as long as the comb continues fresh.

CUCUMBER CULTURE (J. S.).—Your treatment is, no doubt, the best under the circumstances, but it would have been better had the bed been furnished with bottom heat. We should keep the heat up to 65° at night, and 70° to 75° by day, with a rise from sun heat and air to 80°, 85°, or 90°. Syringe the plants lightly twice a-day, but depend more on sprinkling the floors and other surfaces than on syringing the plants. Twice a-day would be too often to water the bed. Twice or thrice a-week will be sufficient. Admit air early in the day and close early in the afternoon. Gusho is a good liquid manure when given once a-week at the rate of 1 oz. to the gallon of water; we use 1 lb. to twenty gallons, which is rather weaker. All watering and syringing should be with water of the temperature of the house. The treatment of the shoots is right—at the fifth joint, and then one joint beyond the fruit. Cut-out those that have fruited, training others in their places.

ANTENNARIA TOMENTOSA PROPAGATION (R. P.).—This, which is one of the best hardy white carpet plants in cultivation, is readily increased by cuttings. Slip off the shoots when about 2 inches long, pare the base smooth with a sharp knife, insert them in sandy soil in a shady border, and cover them with a frame or hand-glass. Propagation may be effected in spring in glass heat, or in summer, up to September, without heat. Our "Kitchen Gardening for the Many" contains particulars of Cucumber forcing. It may be had free by post from our office for 5d.

CARNATIONS GRUB-EATEN (Biceps).—We do not know the grubs by the description, but think they are more likely to be wireworms than "leather-jackets." Remove the soil about the plants, and dust with quicklime and soot in equal proportions; then fill it in, and again dust round the plants, and give a good watering, say a gallon to each plant, with gusoo water—1 oz. of gusoo to the gallon. Round each plant insert in the ground about 2 inches half a dozen baits of Carrot cut in pieces about 2 inches long; examine them frequently, and you will probably find the grubs eating at the Carrots, after destroying which the baits may be replaced and renewed as required. We should dust soot round the plants every week or ten days, and point it in lightly with a fork.

BLACK HAMBURG VINE UNFRUITFUL (A. H. D.).—How can you expect the dressing of manure and bones you applied to the soil this spring to have any effect on the Vine's fruitfulness or unfruitfulness this season? The growth of this year is that from which the fruit is produced in the next. All the good the dressing of manure and bones will do this year is, by enriching the soil, to stimulate growth in the Vine, which is all very well if the growth is weak and the wood is well ripened. You say it grows well and looks very healthy. We think your soil is suitable, otherwise this would not be the case.

Train the shoots 1 foot 4 inches from the glass; stop them at the first tendril or first joint beyond the bunch, and the lateral from the uppermost leaf to one joint, and that throughout the season. Remove the laterals at all the other joints except the lowest two, and these stop at the first leaf. Allow the leading shoot to grow to the top of the rafter or house, then stop it, and stop the laterals at the first joint, and so on throughout the season. Maintain a moist atmosphere by sprinkling the floors and other surfaces twice daily up to the middle of August, then discontinue sprinkling. Prune in December or before January, preferably about a fortnight after the leaves have fallen. We presume your border is well drained—it cannot be too well drained. We have repeatedly stated the most approved mode of providing a border for the Vine.

PINCHING THE LATERALS OF YOUNG VINES (J. M., M. D.).—It is as you say; the laterals unstopped would tend to increase the size of the cane, but we are not prepared to admit that by allowing the laterals to grow the buds at the bases of the leaves from which the laterals proceed would form "large fruit buds and better bunches for next year." The buds result from the growth of the leaf at the base of which they are situated. The first season of planting we allow the laterals to grow, and this encourages root-action and free growth. If the Vines' growth is weakly we cut them back early in June, and obtain a strong cane in place of the weak one. If your Vines are newly planted let the laterals grow, especially at the lower part of the cane, and when the cane begins to thicken upwards becoming thicker than the lower part, stop the laterals to one leaf and at every succeeding growth. The laterals ought not to crowd or shade the principal leaves, for on their exposure to light and air depends the due development of the buds or eyes at their base. After the first or second year, the laterals should be kept closely pinched-in to one joint.

ECHVEIRIA METALLICA PROPAGATING (J. M.).—It is best raised from seeds, but the leaves root freely, the small leaves being best. They should be put in from the present time up to August in very sandy soil, surfaced with silver sand. Only insert the leaf deep enough to keep it in the soil, under a frame, which should be kept close and moist, but not very wet until they strike root. Shade from bright sun for a few days. After rooting expose to light and air. Remove to a light airy position in a greenhouse before frost.

SOWING EARLY SPRING-FLOWERING PLANTS (Idem).—*Alyssum saxatile* compactum, yellow; *Arabis alpina*, white; *Aubrietia græca*, purple; *Bellis perennis* flore-pleno, Double Daisy; *Campaula carpatia*, blue; and *Belvoir Castle Dwarf Yellow Wallflower*. Sow at once, and prick out when large enough to handle, in light rich soil in a sheltered border.

RHODODENDRON PRUNING (H.).—You may cut-in the plants to the form desired, but they will look bare for a long time, especially if the pruning be deferred until after flowering, as the growth of the year is then considerably advanced. We prefer to prune in April, and have a good growth the same season, though it be at the sacrifice of the year's flowers. If you prune now they will not make wood that will flower next year. Probably the pruning need not be more than to remove the irregularities of growth, which we should do directly after flowering; and having other young growth, the flowering next year would not be lost.

ANNUAL FOR BORDER—PLANTING IVY (Petite).—The quickest-growing annual is probably Candytuft, of which there are varieties with crimson or purple, blue, and white flowers. *Virginia Stock*, both red and white, is dwarf and flowers early. The Ivy may be planted in October, or in spring before growth commences. Periwinkle is good as a surface-covering. Plant in autumn.

SELECT YELLOW CHRYSANTHEMUMS (M. D., Inverness).—*Aurea Multiflora*, *Golden Beverly*, *Guernsey Nugget*, *Duke of Roxburgh*, *Jardin des Plantes*, and *Luna*. These are of the large-flowering varieties. Pompons with yellow flowers are—*Aigle d'Or*, *Antoniou*, *Golden Cade Noili*, *Golden Circle*, *Mrs. Astie*, and *St. Michael*.

PROPAGATING MRS. POLLOCK GERANIUMS (A. B.).—The best way is to take off cuttings with two joints and the growing point, remove the leaf from the lowest joint, and insert them singly in equal parts of fibrous loam and sand up to the second joint. Place the pots in a cold frame on ashes, shade from bright sun, but admit a little air. Cuttings will also strike freely on a shelf in the greenhouse. The soil should be kept sufficiently moist, but dry rather than otherwise.

RENEWING ASPARAGUS BEDS (Idem).—Your beds eight years old will not need renewing for some time. They should remain good for from twelve to twenty years. Should they, however, be heaving very indifferently, it would be well to make new beds, and when the latter come into bearing to do away with the old beds. As long as the beds supply plenty of heads there is no need for renewal, and it is better to form new beds than to patch-up old ones.

ASPARAGUS SHOOTS EATEN BY GRUBS (E. J. Turner).—We do not know what the grubs may be, but we apprehend they are slugs cutting off the shoot before it is out of the ground. Dress the beds at once with salt, 1 lb. to every square yard. This, we think, will free you of the pests. It will not, we think, be necessary to make the bed afresh, but if the shoots do not come freely this summer and are very thin, replant next spring.

HEATING SMALL GREENHOUSE (Sussex).—A gas stove would be best for so small a structure. Whatever stove you use must have a chimney to convey the smoke or fumes into the open air, or they will kill your plants.

TRAINING FRUIT TREES ON WIRED FENCE (Ramatho).—Apple and Pear trees are usually trained on the palmette system; Plums are fan-trained. As yours are already trained on the fan system, and succeeding, why alter them? We advise you to leave them as they are; do not train-in so much young wood on the Pear and Apple trees as you do in the case of the Plum. The excrescences on the Lime leaves sent are not uncommon.

IMPROVING THE STAPLE OF CLAYEY SOIL (C. C.).—So heavy a soil would be best rendered more open by taking off the top 9 inches, and then burning the next 9 inches, and mixing the ashes with the top soil that had been taken off. In addition, you may work in the sea sand abundantly.

KIDNEY BEANS FAILING (J. M. A.).—If the seeds were old they will not vegetate; cold and excessive wet also rot them.

CALCEOLARIA'S LEAVES EATEN (Fidger).—The leaves you sent us are completely skeletonized by some grub or caterpillar, but what it is we are unable to say in the absence of a specimen. Dust the plants with quicklime. You would probably take them at work if you were to examine the plants after dusk with a lantern. If the destroyer be a caterpillar, dust the plants with white hellebore powder. The plants do not appear to be affected by canker.

GREENHOUSE VENTILATION (Idem).—The air should be admitted by the top lights first; let in a little at 65°, and increase the amount as the temperature rises, having full air on at 75°. No air need be given in frost as long as the top ventilation is sufficient to prevent the temperature from rising too

high. The blooms of the fancy *Pelargoniums* will not be injured by the air-giving. For the *Vine* you ought to command a temperature from sun heat by day of 75° to 80°, giving air at 65° so as to suit the *Pelargoniums*, and leaving a little on all night to prevent the deposition of dew or moisture on the *Pelargonium* blooms. We should shut-up the house, or begin reducing the ventilation, at 75°, allowing a little air, as before stated, to remain on all through the night.

BUDDING ROSES ON THE CABBAGE ROSE (Albury Heath).—You may bud *Roses* on the *Cabbage Rose*, but except for weak growers we fear it would not answer, not being of sufficiently vigorous growth. A more free-growing stock would be preferable, as the *Manetti*. The best time to bud is in July, as soon as the flowers are shed, choosing moist weather.

CINERARIAS GOING OUT OF BLOOM (Ignoramus).—In general most people prefer sowing seed and raising a fresh supply every year, but if you have any particular kind you wish to retain it is better to cut it down before its flowers are too far advanced, as it is then more likely to start and grow at the collar. Plant it out in a shady border, and about the beginning of September or before, you may take it up, divide, and pot. Gradually inure the divisions to the full sun, so as to have sturdy plants with short leafstalks. If you prefer seedlings, only allow some of the very best to stand, and sow the seed as soon as ripe. We have often seen patches of healthy seedlings come up on a hard bed of coal ashes under the shade of the plants that dropped the seed, and such plants do very well here.

WINTER TREATMENT OF PANSIES (Idem).—If you can have a batch of well-rooted cuttings ready to plant out by the end of September in a suitable prepared bed, so as to insure their getting established before winter sets in, they will require no further attention, but some dry fern thrown amongst them may be of service at the time of a very hard frost, when there is no snow on the ground; still, they seldom require this protection except in exposed places. Plants established in their quarters in the autumn flower much better than those put in during the spring.

SOIL FOR PANSIES (Idem).—We think that your mixture of three-parts leaf mould and one of sand will not retain sufficient moisture without hand-watering to sustain your *Pansies* against the dry weather that may be expected in July. The soil which you have adopted should be of a good depth, and you must give the plants plenty of water, say twice a-week, or oftener in very dry weather. We like a firm soil, at the same time deep and not invaded by the roots of trees. In general, better *Pansies* are grown in Scotland and the north and west of England, where the rainfall is abundant, than in the dry southern and eastern counties. You ask where loam is to be had, and also what it is? Both are difficult questions. The first we can make no attempt at answering, as any place we might name would probably be out of your reach. With regard to the other we may remark, that whenever in travelling by rail you notice land that has been tolerably firm when turned-up by the plough, showing a smooth almost shining furrow-slice, you may safely call that loam, and if it shines very much you may pronounce it a clayey loam, or simple clay if you like—i.e., if it be too adhesive. On the other hand, soils which show no such appearance are either sandy or gravelly, or it may be peaty. For our own part we like a certain amount of adhesiveness; such soils support vegetation better, and are less affected by vicissitudes of weather. When aided by enriching substances, *Pansies* grow well in soils of this description. In your case we fear the blooming period will be but short unless you use the watering-pot liberally.

TREE CARNATION CULTURE (S. P. S. X.).—The soil should contain a great deal of lime; we believe that success in a peat soil cannot be attained. Assuming that you have a quantity of overgrown plants, we would say plant them out on some suitable piece of ground, spreading the tops all over it; and in a few days afterwards, when the tips are mostly turned upwards, layer them in the usual way in the soil, and remove all blooms. By the end of August you will have a number of well-rooted plants; then take them up, and pot two or three in a pot as you think fit, and by careful attention during the autumn they will all show flower, and will continue to bloom during the winter. A portion may be retained in pots the following summer, plunging them amongst ashes in a sunny place after potting, and removing all flowers showing during the summer. Now and then failure will occur, and at best the number of flowers furnished by a successful plant is comparatively few, so that a *Carnation* at Christmas is a greater luxury than a *Camellia*.

NAMES OF PLANTS (H. G. M.).—*Claytonia perfoliata*, a native of North America, a hardy annual. (S. O.).—*Polygala vulgaris*. (*Subscriber, St. Leonards*).—1, *Bunium fernosum*; 2, *Stellaria Holosteæ*; 3, *Lychnis diurna*; 4, *Asperula odorata*; 5, *Orobis niger*; 6, *Ranunculus aquatilis*. We restrict our naming to six at a time. (*Canice*).—*Ulmus montana*, the Wych or Scotch Elm. It is a native of this country and plentiful in Scotland, both from self-sown seed and in plantations. Its habit of growth is not so upright as that of the English Elm, and it does not attain so great a height, but its branches are wide-spreading. The wood is very tough, and is used in ship-building, wheelwright's work, by cabinet makers, and for the handles of spades and other tools. (C. L.).—The berries sent you as "*Cottineus*" seem to be those of *Cotoneaster microphylla*. (H. W.).—*Pyrus torminalis*.

POULTRY, BEE, AND PIGEON CHRONICLE.

DOGS IN GENERAL,

AND A VISIT TO THE HOME FOR LOST DOGS.—No. 1.

"The rich man's guardian, and the poor man's friend,
The only creature faithful to the end."

WHOEVER it was that wrote those two lines, it is certain that he was a true poet, and he had also what is just now more to the purpose—a true knowledge and a thorough appreciation of the nature, instinct, and wondrous affection of a good dog. I say of a good dog, for, like men, they vary. Some care only to be petted; some are as cross and cantankerous as some men and women, giving not a kind look, nor one wag of the tail, save when their belly is concerned; some are but animals of sport, good in their class and for their work, but nothing more; some are too general in their affection, and, like flirts, are little to be cared for. As far as my experience has gone, goodness with dogs is much connected with size, although I have known ex-

ceptions to this rule. Still I would say, Large dog and large heart go together. Not always the largest animal, but the largest of a variety. A good dog is one that barks, not yaps; one capable of a sonorous bark, not a creature that can only yap like a cur. The bark, too, must be a good bark, not the jirking snapping sort of bark which indicates irritable temper. This distinction between good and bad dogs is specially to be marked; and those who affect to think all dogs good make a mistake, and do harm, for those who do not love dogs confound the yapping little wretches with their good brothers, and, pointing to some cantankerous little selfish wretch with four legs and a tail, say, "I wonder how ever people can make such a fuss about dogs; I think they are horrid animals." You may have many dogs, but only one may come up to the standard; but if you want a good dog I do not think you will get one if it be a creature but the size of a cat. Remember this rule, Goodness and size go very much together.

Then, be kind and firm to your dog. Do not treat him as foolish mothers do their children—over-pet one day, and be passionate with them the next; such conduct spoils a child and a dog too. Train well, and behave sensibly, for the master in a great degree makes the dog. The master and the dog often greatly resemble each other. A dog constantly in the atmosphere of the bad-tempered grows bad-tempered too; the sleek-haired fur-capped rascal has his counterpart in the wicked-looking brindle-marked bull-dog at his heels. But choose your future pet discreetly; train him well, treat him like a sensible being; do not make him the one to endure your outbreaks of ill temper; do not at times kick the poor brute under the table—in short, deserve his respect and love, and you will have them. Then the two beautiful lines I have prefixed to this paper will be exemplified in your dog; he will delight to be the guardian of your sleeping hours, the friend of your waking hours, and will be faithful to you in sickness, when the mere acquaintance will not think of you, when many a friend will fear to intrude upon you; but when the near relatives are with you, the wife of your youth, or your children are by you, then your good dog will whine at the door of your sick-room and claim admittance, and be sorry for you, and often sick with you, and not be bright and happy until he sees you well again.

"Faithful to the end;" yes, and sometimes faithful even beyond the end. As proof, take this true anecdote of what occurred to my own knowledge during the past year only. A large bull-terrier, the product of the first cross, stout of limb, menacing to beggar and thief in look, yet a great kind-hearted creature in spite of look to those of his own home—a child might lead him with a thread; just such a dog as Wood, the naturalist, describes when he says, "The real bull-terrier of the first cross is a marvellously brave animal, and far exceeding the bulldog in agility and intellectual quickness. Fear seems no part of his character, and he dashes with brilliant audacity at any foe which his master may indicate to him, or which he thinks it is his duty to attack." Well, a dog of this kind became last year—chiefly for his suitability for a watch dog and his powers of protection, for woe to the night thief that he got hold of—became a clergyman's dog. His mistress was from the first his friend, though "Tartar" did not look at all a lady's dog. But the words, "Come to missus," or, "Go to missus," were obeyed with alacrity, and his great ugly face and little queer eyes looked almost handsome when he bounded up to "Missus." By one of those dispensations of Providence, strange to us, but which make us bow the head meekly, though we cannot yet understand the why and wherefore, the dog's mistress died almost suddenly and prematurely. As Wordsworth says—

"The good die first,
But they whose hearts are dry as summer dust
Burn to the socket."

Well, Tartar understood it all, noted all the events of the dreadful days before and after, knew the graves, went each morning with his master to see it, stood by its side, not putting a foot on it; he looked down sadly, looked up into his master's face sympathisingly. This went on each day, when the master was at the usual time of the visit summoned in haste to the church for a register, and, therefore, passed by the grave without stopping. But the dog stopped, and gave such a look, so full of meaning and so continuous, that the master left the key in the unopened door and went back to the grave, and then, but not till then, the dog was satisfied. This was being faithful even beyond the end.

But dogs—i.e., good dogs, for mark the difference, there are thorough bad dogs, but often made bad by the companionship of bad men. Good dogs, I say, are not only good to their masters and those with whom they live, but good to each other. Take this example, which occurred within the last few months. A retriever and a young St. Bernard were companions at the same home, their kennels being in the same yard. Did my readers ever make the acquaintance of, or possess, or bring-up a St. Bernard pup? Some may not have done. Take, then, this description. In the words of Slender, in the "Merry Wives of Windsor," "She's a great lubberly boy." Large-limbed with

as yet no command of those large limbs; legs going out sprawlingly when a run is attempted, a puppy far bigger than most grown-up dogs; therefore, all puppy ways seeming in him or her very out of place; often a great coward, not daring to go into a town, or away from home, flattening himself on the earth in very cowardice; in short an awkward hobbledoy, or, as Slender says, "She's a great lubberly boy." Yet this pup in two years' time (for it takes two years for a large dog to become adult), will become the massive, and strong, and well-knit, and noble-bearing, and noble-looking, and courageous St. Bernard dog; the character, the appearance, the expression wholly altered. Well, this retriever, a small one, and a half or three-parts-grown St. Bernard, were companions and friends; the neat-limbed retriever, not a large one, and the as-yet somewhat sprawling-limbed St. Bernard. The retriever—such a water dog! dashing in from any height, glorying in the limpid stream; but the St. Bernard, the big calf looking on and by no means having heart enough to trust himself in the water. But he slips in one day, and in terror splashes about and tries in his abject fear to ascend the steepest part of the bank. This he cannot do, and he is in peril, which as soon as the little retriever sees, she, for it was a "she" (little women have always the most pluck), goes to the rescue, and pulls into safety the great quaking mass of dog's flesh. The St. Bernard reciprocates the friendship and now would annihilate any dog that attacked his friend.

But as this paper has contained some sad lines, let me finish it with some lines of humour. A friend of mine possesses a white Pomeranian dog, white and small—both good points; foxy-faced, and with such a pair of sparkling black eyes and tulip ears—all good points! These dogs are pleasant cheerful companions, not given to hunting game, but keeping company only with their masters. Still they are not, as "Idstone" states, "remarkable for intelligence," and they have a decided fault in being apt to snap at people. My friend cautioned a new servant boy as to the dog's propensity for snapping. "I am used to it, ma'am; for my late missus had a dog of the same sort, and when I wheeled her in the Bath chair, he snapped at my calves every day." Think of the defenceless position of the boy—both hands pulling the chair, and his calves daily snapped at! What a lucky dog he must have deemed himself to have had calves each day ready for snapping! then they were so helpless and so tempting. Then the coolness of the lad—so used to the dog's teeth, he thought nothing of them. Just as "The hand of little employment hath the daintier sense," so the leg constantly snapped at became so used to it that it cared nothing for the snapping. Perhaps the boy looked down with a grin, and even learned to enjoy it. Who knows?—WILTSHIRE RECTOR.

GAPES: ITS CAUSE, PREVENTION, AND CURE.

THE fact that the disease was caused by a worm was proved by Dr. Wiesenthal, Professor of Anatomy at Baltimore, in 1797. The only difference of opinion resulting from late investigations is in the shape of the worm. A description of this worm—*Sclerostoma Syngamus*—I shall reserve for a future article, not yet having examined the subject microscopically as fully as I wish.

Nearly eight years ago the writer became convinced that the progenitor of this troublesome worm was a tick or louse which was found on the head of the young chick soon after hatching. At that time, not having the facilities for a thorough microscopic investigation, I simply communicated my views to the press without illustration. Subsequent examination, aided by the microscope, and experiments confirmed by several years' study, have left no doubt in my mind that the theory then adopted is the correct one—viz., that this insect deposits its eggs in the nostril of the chick, where the warmth of the bird causes them to hatch; the larvæ or worms thus generated work their way back or are conveyed thence by natural causes, and getting a lodgment in the opening, of the trachea, there grow, and finally cause the death of the bird by suffocation.

Having had no cases of gapes upon my own yards for many years, I have been obliged to depend upon the kindness of brother fanciers for specimens of the insect, and these, in a majority of cases, have been dead when received. This spring I obtained three specimens from my own yards, and with the aid of a powerful microscope I have made correct drawings of both back and belly of the insect, as well as studied its motions and formation. The dark markings on the back of the insect are a deep brown, and the body a light leaden grey. The legs are six in number, and all terminating with a sharp curved hook. This hook is attached to the end of the leg by a joint, and shuts or closes upon a hard pad, thus obtaining a grip which can hardly be dislodged short of tearing out either the claw or the object in which it is inserted. The whole three pairs of legs bend towards the head, while in the ordinary species of lice the two posterior pairs bend backward. What appears to be the first pair of legs are, in fact, feelers, formed of five-jointed sections, and moveable in all directions. The eyes of this insect are very distinct and prominent; the mouth is seemingly devoid

of teeth, nourishment evidently being obtained by suction; the under jaw or lip falling quite back, somewhat resembling that of a sucker. Very few hairs are discernible, and these not in tufts but singly. The markings on the back are very perfect in form, and of a rich, dark brown colour. The shell of the insect is laminated both on the back and belly, and appears to bear a considerable amount of pressure without injury.

When my attention was first drawn to these insects I removed them by picking them off, but finding that a tedious operation, I tried consecutively mercurial ointment, kerosine, and lard, sometimes with fatal result to the chicks, and at others with only partial success. After several trials I compounded an ointment of 1 oz. mercurial ointment, 1 oz. pure lard, $\frac{1}{2}$ oz. flour of sulphur, $\frac{1}{2}$ oz. crude petroleum.

This I applied to the head of the chicks when taken from the nest, in a semi-fluid state, repeating the application once or twice afterwards if deemed necessary. In all cases where the insects were removed by hand or destroyed by the ointment, the chicks escaped the gapes, although other broods in the same yard not so treated had the disease, and nearly all died with it. I have had the application tried in yards where the gapes had swept off hundreds of chicks annually for many years, and the result was the entire eradication of the disease. On one yard where fowls have been bred for over forty years, and where, ten years ago, three-fourths of those hatched died of gapes, there has not been a single case since this preventive was thoroughly tried, six years ago. Mr. J. J. Black, in the "Bulletin" of June, 1872, corroborates my opinion on this subject. A Dr. Cobbald, in a memoir presented to the Linnean Society in England many years ago (see "The Illustrated Book of Poultry," by L. Wright, page 196), makes a suggestion which seems to anticipate this theory. He says: "By whatever mode the young (of the gape worm) make their exit from the shell, it is manifest that prior to their expulsion they are sufficiently developed to undertake an active migration; their next habitation may occur within the body of certain insect larvæ." It seems almost certain that the insect is either the direct connecting link between the egg of *S. Syngamus* and the perfect worm, or else, as Mr. Wright suggests, "the vehicle for conveying either the ova or the newly-hatched worm to the nostrils of the chickens;" which can only be ascertained by patient and protracted microscopic investigation, and the solution of the case offers no adequate gain.

There is but one certain cure for the gapes yet known to the poultry fraternity, and that is the vapour from carbolic acid. Place a little of the crystallised acid in a spoon or metal saucer, and hold it over a candle or lamp; hold the bird so that it will be obliged to inhale the fumes, being careful, however, not to protract it so long as to kill the chick. One application, if thorough, will usually be sufficient, though occasionally a second may be necessary.—Mr. A. M. HALSTEAD.—(*American Poultry Bulletin*.)

MALDON POULTRY SHOW.

THE annual meeting of the Essex Agricultural Society was held at Maldon on the 11th and 12th inst. The route from the railway station to the Exhibition, a distance of about one and a half mile, was gaily decorated with garlands, and flags innumerable were extended from window to window across the roads. Several special trains brought crowds of visitors, so that the little borough was a scene of life and gaiety.

The show of poultry was enclosed from the agricultural exhibition, and notwithstanding that an extra fee was demanded for admission, it appeared to have its full share of patronage; up to one o'clock on Wednesday the fee was 2s. 6d. to the grounds, and an extra 2s. 6d. to the poultry Show. About 180 visitors paid these rather excessive admission fees.

The poultry entries numbered 163, those of the Pigeons fifty. A silver cup value £4 4s. brought together a large entry of *Dorkings*. The first prize went to a grand pair, very dark in colour; the second and third prizes to birds of about the average quality; and a pair of Silvers belonging to Messrs. Wren & Page also deserved notice. The Buff *Cochins* were tolerably good, *Cochins* of any other variety rather inferior. The Dark *Brahmas* were in splendid condition, Mr. Ansdeall securing another cup, rather closely pressed by Mr. Lingwood. The Light *Brahmas* were of average quality. The position of the first and second-prize pens would certainly have been transposed had the legs of the hen in the second-prize pen matched those of the cock. The Red and Duckwing classes of *Game* were generally of superior quality; Any variety of *Game* not so good. The *Spanish* class, with the exception of the first-prize birds, was wretched in the extreme; the third prize was justly withheld. The *French* class was again the best in the Show, *Crêves* winning all the prizes; they have so improved that it appears almost useless entering *Houdans* against them. The *Hamburghs* were good, the *Game Bantams* moderate, and the Any other Variety of Bantams were much above the average. In the class for Any other distinct breed, a fine pair of Malays belonging to Mr. Brooke arrived too late for competition, otherwise they would have superseded at least the third-prize birds, which appeared to have nothing but

extraordinary size to merit notice. *Turkeys, Ducks, and Geese* were generally good. The prizes in the *Pigeon* classes were very small; the result was a very poor display, *Homing Antwerps* being best both in quality and numbers.

The judging was unexceptionally satisfactory, and the arrangements in every way complete.

DOCKINGS.—1 and Cup, Henry Lingwood, Barking, Needham Market. 2 and c, F. Parlett, Great Baddow, Chelmsford. 3, E. W. Southwood, Fakenham. *hc*, J. Robinson, Garsington.

COCHINS.—*Buff or Cinnamon*.—1, Cup, and 2, Henry Lingwood. 3, S. R. Harris, Cusgarne. *c*, A. A. Seaborn, Hadleigh, Suffolk. *Any other colour*.—1, R. S. Woodgate, Penbury, Tunbridge Wells. 2, J. K. Fowler, Aylesbury. 3, Withheld.

BRAHMAS.—*Dark*.—1 and Cup, T. F. Ansdeall, Cowley Mount, St. Helens. 2 and 3, Horace Lingwood, Creting, Needham Market. *hc*, J. Harvey, jun., Thaxington, Canterbury; Rev. J. G. B. Knight, Dasher, Chelmsford. *c*, H. Dowsett, Fleasby, Chesham.

BRAHMS.—*Light*.—1, Horace Lingwood. 2 and 3, H. M. Maynard, Holme-wood, Ryde. *c*, H. Dowsett; T. A. Dean, Marden, Hereford.

GAME.—*Black-breasted and other Reds*.—1 and 3, S. R. Harris, Stowmarket. 2, W. Foster, Deal. *hc*, H. E. Martin, Fakenham; J. W. Fitch, Romford. *c*, H. L. Cocksedge, Woolpit; J. H. Salter, Kelvedon.

GAME.—*Duckings and other Greys and Blues*.—1 and Cup, S. R. Harris. 2, R. Hall, Cambridge. 3, H. L. Cocksedge.

GAME.—*Any other variety*.—1, J. H. Salter. 2, R. Hall. 3, E. Swan, St. Ann's, Colchester.

SPANISH.—1, Nicholla Broca, Camherwell. 2, T. Boulter, London. 3, Withheld.

FRENCH.—1 and *hc*, W. Dring, Faversham. 2, J. J. Malden, Biggleswade. 3, G. W. Hibbert, Godley, Manchester. *c*, Rev. T. C. Beasley, Saffron Walden; H. Feast, Swans; J. K. Fowler.

HAMBURGS.—*Spangled*.—1, J. Wright, Lowestoft. 2 and *hc*, J. Robinson. *c*, L. Wren, Lowestoft; W. Groom, Ipswich. *Pencilled*.—1, W. K. Tickner, Ipswich. 2, J. Robinson. *c*, W. Speakman, Nantwich; J. Robinson.

BANTAMS.—*Game*.—1, W. Adams, Ipswich. 2, W. B. Jeffries, Ipswich. *hc*, G. Garrod, London. *c*, J. S. Pearson, Great Milton. *Any other variety*.—1, T. E. Thurtle, Lowestoft (Black). 2 and *c*, G. B. Francis, Romford (Cockoo Japanese and Black).

ANY OTHER VARIETY.—1, J. Robinson (Polands). 2, Withheld. 3, Mrs. Pattison, Maldon (Black Hamburgs).

TURKEYS.—1, Mrs. Mayhew, Chelmsford. 2, Withheld. 3, A. P. Clear, Maldon.

GESE.—1, J. K. Fowler. 2, A. P. Clear. 3, S. Hanbury, Witham.

DUCKS.—*Rouen*.—1, F. Parlett. 2, H. Dowsett. 3, J. K. Fowler, Aylesbury. 1 and Cup, S. R. Harris. 2, J. K. Fowler. 3, Mrs. Pattison.

SELLING CLASS.—*Cock or Hen*.—1, H. H. Rush, Heybridge, Maldon (Dorking). 2, Rev. S. Phillips, Castle Hedingham (Dark Brahms). 3, J. H. Salter (Duckwing). *hc*, H. H. Rush (Dorking) (S); R. Wilkinson, Guildford (Gold-spangled Hamburg); R. H. Eve, Fullbridge, Maldon (Hybrid between Bantam and Pheasant); J. Robinson. *c*, Rev. S. Phillips; H. Dowsett. *Drake or Duck*.—1, H. Dowsett (Rouen). 2, F. Parlett (Rouen). 3, J. Robinson.

PIGEONS.

CARRIERS.—1 and 2, E. F. Wilson, Brighton. *hc*, E. J. C. Gibson, Ryde, Isle of Wight.

POUTERS.—1, J. T. Cater, Colchester. 2, F. Cowlin, Latchingdon, Maldon.

FANTAILS.—1, J. F. Loveside, Newark. 2, Withheld.

TRUMPETERS.—1, H. W. Hale, Hackney. 2, A. B. Douglas, Hounslow, W. *hc*, J. T. Cater; E. G. C. Gibson.

JACOBIANS.—1, E. G. C. Gibson. 2, J. T. Cater.

TRUMPETERS.—1 and 2, G. P. Jay.

ANTWERPS.—*Working*.—1 and *hc*, E. F. Wilson. 2, T. King, Colchester. *c*, R. Hall; F. Mantbore, Colchester.

ANY OTHER VARIETY.—1, G. Norman, Westerfield, Ipswich (Black Barbs). 2, J. T. Cater. *hc* and *c*, E. G. C. Gibson (Jacobins and Pigmy Pouters).

SELLING CLASS.—1, J. T. Cater.

JUDGE.—Mr. W. B. Tegetmeier, Finchley, London.

BLACK GAME.—I have received promises of subscriptions for a cup for Black Game at the next London Poultry Show—viz., Rev. G. S. Cruwys, £1; C. F. Montrésor, Esq., £1; Capt. C. F. Terry, 10s.; Capt. W. G. Webb, 10s. 6d.; E. Kendrick, jun., 10s. Also for a cup at Birmingham, C. F. Montrésor, Esq., £1; Capt. W. G. Webb, £1; E. Kendrick, jun., 10s. Further subscriptions should be sent at once to—E. KENDRICK, JUN., Weeford House, near Lichfield.

SIZE OF HIVES.

As no evidence has been tendered showing that "Scotland, as a whole, is now converted to the idea of large hives of simple construction," I presume none will be forthcoming. I selected for comparison what I considered Mr. Pettigrew's medium, and gave the medium that I regarded as suitable. Instead, therefore, of the sizes 21, 18, and 15 inches in width by 12 inches in depth, as recommended in the Journal of October 28th, 1868, I am of opinion that the sizes 14, 12, and 11 inches in width by 11, 10, and 10 inches in height are the best for skeps under the simple swarming system, and where the practice of removal from one district to another is not followed. The sides of the skeps should be nearly perpendicular, and no bars or "sticks" used for supporting the combs.

I may state, however, that I have abandoned the use of straw skeps, and now employ only "Woodbury frame hives," which, though inferior to different hives of different material and shape in some particulars, are yet "as a whole" superior to all with which I am acquainted.—R. S.

APIARY APPLIANCES.

WE have from time to time published descriptions and drawings of hives various in form, but have not been able to supply similar information relative to other things useful for the bee-master to have at command. This information we are able to supply by the courtesy of Mr. Yates, Old Millgate, Manchester. It is extracted from his catalogue.

PETTIGREW'S HIVES (*fig. 1*).—These are made in Scotland, of straw, bound with cane. The sides are upright, with a flat top; a hole, 4 inches diameter, is left in the crown, with a loose straw lid to cover it; a good thickness of straw is used, so as to resist the effects of alteration of temperature. Mr. Pettigrew uses 18 and 20-inch hives for strong and very early swarms, and a

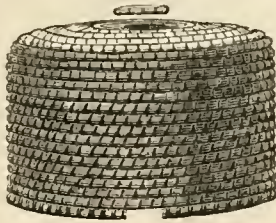


Fig. 1.

16-inch size for the later ones. In the drawing the lid is raised above the hive to show the hole in the crown. It is easily secured to the top by three long nails, and can readily be removed when required for supering, feeding, &c.

YATES'S ROUND-TOPPED HIVE (*fig. 2*).—These hives are from the same maker, but differ in having the top rounded instead of being flat, and in having a wood crown worked with the straw,



Fig. 2.



Fig. 5.

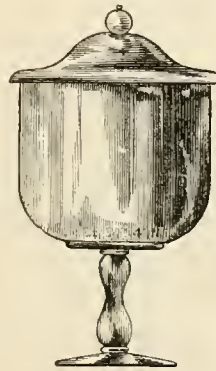


Fig. 6.

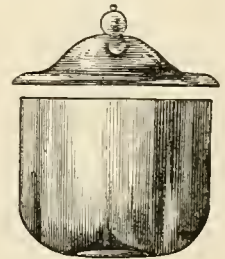


Fig. 7.

enabling the hole for supering to be more neatly turned, the level, even surface of the wood holding a glass super more safely than when merely resting on the straw; the wood plug being



Fig. 3.



Fig. 4.

also, perhaps, more easily managed than the straw lid. These hives are not adapted for using as nadsirs, but for all other purposes are in every respect equal to those with a flat crown.

by a few nails or wire. It may be observed that bees storing the stock hive increase in weight faster than when filling supers, and that, to gain the heaviest weight of honey, ckes are preferable to supers. The honey thus collected, however, is not so accessible, nor is the comb so pure as that in supers.

STRAW SUPERS are neatly made of straw, with narrow laps, very firmly sewn. Bees adopt supers made of straw more readily than those of glass, so that if pure honeycomb is desired, and the appearance not studied, these will be found more economical.

STRAW SUPER COVERS are to protect the glass supers, and, though quite sufficient for their purpose, are not especially neatly made. It will be remembered that at the honey season, when supers are required, the internal temperature of the hive is very great, and the moisture given off very considerable. Now, this will condense on any cool surface, and unless the glass super is well protected by wool, felt, or other non-conducting material, the interior surface of the glass will always be covered with moisture, and quite unfit for the bees to attach their combs. This, to some extent, is counteracted by the perforated ventilator, but still the glass cannot be too well protected.

BELL-GLASS SUPERS (*fig. 3*), when filled with honeycomb, have a very elegant appearance. They have a hole in the knob for the insertion of a tinned perforated tube for ventilation.

MR. PETTIGREW'S GLASS SUPER (*fig. 4*).—This is made with a loose lid, and will hold from 12 to 16 lbs. of honey.

THE ABINGDON SUPER (*figs. 5, 6, and 7*), when filled with honeycomb forms a very ornamental acquisition to the breakfast or tea-table. It is made in three pieces (as shown in the engravings), the body, the lid, and the stand. The glass is constructed with a hole at the bottom, 3 to 4 inches in diameter, through which the bees enter and fill it with honeycomb. It is placed on the stand

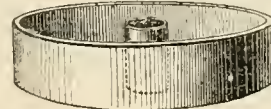


Fig. 8.

when it is removed from the hive. These supers are made in three sizes.

PERFORATED SUPER TUBES are tinned tubes perforated throughout. They are placed through the hole in the knob of the glass super, forming excellent ventilators for carrying off the moisture and keeping the glass cool, consequently not so liable to contain brood.

THE LANCASHIRE BEE-FEEDER (*fig. 8*) is made of tin. It is

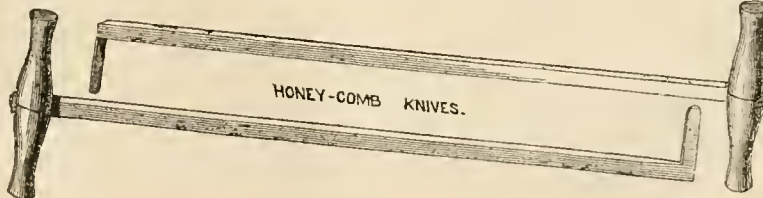


Fig. 9.

A STRAW EKE conveniently increases the size of the hive by adding 4 or 5 inches to its depth. It consists of four or five rolls of straw, made like the sides of the hive, with a place left for the entrance. It is easily attached to the bottom of the hive

9 inches in diameter, and will hold 6 lbs. of syrup. It is intended to be placed on the top of the hive over the hole in the crown. The entrance is through the centre of the feeder, as indicated by the dotted line. Both the inside and outside of the entrance

is lined with perforated tin, so as to present a rough surface for the bees to climb, and the top of the entrance-tube is half an inch lower than the height of the feeder, so that when covered with its tin lid it will allow the bees to climb over to the wood float, which rests on the surface of the syrup, and sinks as the bees take and store it in the hive.

HONEYCOMB KNIVES (*fig. 9*).—These will be found useful implements for cutting-out surplus honeycomb. One is constructed for cutting perpendicularly, and the other horizontally, and for lifting out the comb when cut. In the autumn it is often found that more honey has been stored in the stock hive than the bees will require, and that it is not desired to do away with the old stock; in this case the outer combs will generally be found full of pure honey, and with the aid of a little smoke these combs can be cut and removed as easily and safely as those from a bar-frame hive.

BROWN-BARRED SILVER DRAGOONS.—At the last Crystal Palace Show all the prizes and commendations were awarded to the black-barred birds. Being an admirer and breeder of their brown-barred brethren, I am anxious to see a class for them. I am willing to subscribe one guinea towards a cup and prizes for the best single birds of the brown-barred variety at the next Crystal Palace Show, trusting that other fanciers of the same will follow suit.—**WILLIAM BISHOP, The Orchard, Dorchester.**

OUR LETTER BOX.

BOOKS (*J. M. Inverness*).—Our "Rabbit Book" will suit you. It may be had free by post from our office for 7d.

FOWLS DYING (*A. Wright*).—The shrub has nothing to do with their death. It is *Cotoneaster microphylla*.

COCHIN-CHINA HEN (*A. B. C.*).—Shut-up the hen with the swollen vent. Let her have no food by her. That which is given, give scantily. She may drink three times per day, a very little at a time. Let her food be gruel.

SCURF ON COMBS (*C. R.*).—You do not mention the breed of your fowls. Being black and double-combed, we presume they are Hamburgs. The Spanish have played their part in making them, and will at times prove the relationship by showing some of their beauties. To this we believe you may attribute the white face; not so the white comb—that is a malady, and is often very difficult to cure. The only way is to keep the affected parts and the spots constantly moistened with compound citron ointment. The bare places, where the feathers have been eaten, may be treated in the same manner. You need not be discouraged by some single combs. They come in these breeds as in the Sebright Bantams. You must never breed from them, as the single comb becomes hereditary. Kill them when young and put them in a pudding. They make an excellent one.

EARLY LAYING (*A.*).—We are startled now and then with these early layers. The earliest we ever knew was a Cochin that laid at the end of sixteen weeks. We believe it is injurious rather than otherwise to them. They never attain to any size, and they soon wear out. Those that are early layers in June have had great advantage in weather (query in 1873), days getting longer and warmer throughout their lives to the laying time. There is more of maturity about a pullet that attains the age of four months in June, than in one that becomes six months old in March.

NOSTRILS DISORDERED (*R. G.*).—The symptoms you name are those of severe cold or incipient roup. Spanish are not subject to this latter complaint, but like all breeders they are subject to colds, and when allowed to go unchecked it often takes a dangerous form. Just as a surgeon when fever is rife, asks the state of the drains, and examines the sleeping apartments of the infected dwellings, so we should like to know rather more about the lodging and haunts of your fowls than that they have "a stable and a yard." Where do they roost? What is the flooring? What is your dietary? Do they get any sun? We should advise you to give Bailey's or Walton's pills, and to give them every day fresh-pilled lettuce and sods of grass, cut with plenty of fresh earth adhering to them.

CRÈVE-CŒUR HEN (*Filix*).—Keep her with the Crève-Cœur cock exclusively.

CROOKED BREASTS (*H. F. C.*).—There is no cure for crooked breasts in Hamburg chickens. It is always better to leave the chickens with the mother as long as she will care for them, and after they are deserted to let them roost in the rips where they have been brought up. We have chickens now four months old that have never perched. It is weakness of constitution that induces crooked breasts when the parents have it not. No fault is more hereditary; it is detected whenever a fowl is handled, and is a disqualification.

DONKINGS DISEASED (*C. M. S.*).—All the fowls wasting away should be separated from the others. They should be treated with a copious dose (at least a table-spoonful) of castor oil, then fed on bread and ale, bread and milk, and have no drink but camphor julep. Separate them entirely from the hens and pullets. Give them mutton and meat scraps chopped fine.

JUDGES OF PIGEONS (*An Old Southern Fancier*).—We have nothing to say against the gentlemen you mention, but it would not be quite correct to publish your commendation.

PIGEON WITH SORE FOOT, &c. (*Mrs. Langton*).—By your description we think that there must be a gathering in the foot, which, if opened and kept clean, will no doubt heal nicely. Probably the bird has been kept in a dirty cage at a dealer's, or experienced some injury by the prick of a nail, &c. Let the bird have a pan of water placed in the sun to induce it to bathe every morning, as that alone may do it great good. As you are a beginner we strongly recommend you to have a copy of Brent's "Pigeon Book" from our office, free for nineteen stamps. There you will have full details as to feeding, management, &c.

SEX IN JACOBINS (*S. A. B.*).—Your Pigeons are either two cocks or two hens, most probably the former, as, had they been of opposite sexes, they would have paired; or, if two hens, and being kept without a possibility of getting a mate, they would very probably have played at pairing, have made a nest, and laid four eggs in it, with, of course, no result. There are no par-

ticular marks of difference of sex in Jacobins. The cock Pigeon is usually stouter-built, has a thicker beak and a thicker neck than the hen, his coo is longer, and he turns quite round when cooing. It requires experience to know for certain, but if you placed a hen with one of your birds you would know then, as her presence would rouse him to much cooing and playing round her. It is not a good plan to clip the wing, but it is better to pull out the feathers, and by the time they have again grown the birds will have become accustomed to their home.

REMOVAL OF EKES (*R. M. B.*).—We have not had much experience in the use of, or removal of ekes from straw hives. With boxes we usually have a moveable adapter between the stock hive and the eke, having suitable apertures cut out for free communication; or we use shallow boxes fitted with loose bars in the ordinary way, to which the bees attach their combs, leaving those in the original box much as they were before, rendering the removal of ekes very simple. Perhaps Mr. Pettigrew will kindly reply to our correspondent's query as to how he manages with his straw hives, when removing ekes.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1873. June.	Baromet- er at 32° and Sea level.	Hygrome- ter.		Direction of Wind.	Temp. o Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature.				
		Dry.	Wet.			Max.	Min.	In sun.	On grass			
Inches		deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.		
We. 11	29.714	59.7	55.0	W.	57.0	68.2	50.8	148.1	51.4	—		
Th. 12	29.557	61.2	55.6	S.E.	56.6	68.8	45.6	119.6	41.8	—		
Fri. 13	29.609	62.8	54.2	N.	66.9	71.0	48.0	119.2	44.4	—		
Sat. 14	29.759	59.1	53.7	S.	57.0	69.6	47.1	126.2	45.2	0.063		
Sun. 15	29.850	60.5	55.5	W.	57.5	69.4	51.8	117.2	50.2	—		
Mo. 16	29.945	63.7	56.8	N.W.	57.8	72.5	52.6	127.0	49.4	—		
Tu. 17	29.995	66.0	57.0	S.E.	58.5	75.6	47.1	118.6	44.1	0.566		
Menne		29.777	61.9	55.4		57.3	70.7	49.0	119.6	46.6	0.599	

REMARKS.

11th.—Fine all day, but still cold and unsummerlike.
12th.—Fine morning, getting cloudy towards noon, and very stormlike about 2 P.M., when a few large drops of rain fell; from that time very fine.
13th.—Very fine morning; stormlike at noon; thunder at 3.50 P.M., finer after, and very pleasant evening, though a very close day.
14th.—Fine morning; beautiful at noon, soon clouding over, began to rain between 4 and 5 P.M., and continued more or less all the evening.
15th.—Fine morning; rather cloudy in the after-part of the day; rain at night.
16th.—Fine morning; and till between 5 and 6 P.M., when it was very dark and stormlike in the east, but soon cleared off; evening and night fine.
17th.—Very hazy in the morning, soon dispersing, the sun being very bright and warm at intervals, with appearance of storm between.
Temperature a trifle above that of the preceding week. There has been very little rain till the night of the 17th, but it has frequently been dark and stormlike in the distance. Thunder heard on the 13th.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 18.

We have no alteration to report.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	0	0	0	Mulberries.....	10	0	0	0
Apricots.....	2	0	5	0	Nectarines.....	10	0	0	0
Cherries.....	2	6	0	0	Oranges.....	100	4	0	0
Chestnuts.....	0	0	0	0	Peaches.....	10	0	0	0
Currants.....	0	0	0	0	Pears, kitchen.....	10	0	0	0
Black.....	0	0	0	0	dessert.....	10	0	0	0
Figs.....	0	0	10	0	Pine Apples.....	10	0	0	0
Guavas.....	0	0	0	0	Plums.....	10	0	0	0
Cobs.....	2	0	2	0	Quinces.....	10	0	0	0
Gooseberries.....	0	0	0	0	Raspberries.....	10	0	0	0
Grapes, hothouse.....	10	0	12	0	Strawberries.....	10	0	0	0
Lemons.....	100	0	10	0	Walnuts.....	10	0	0	0
Melons.....	6	0	12	0	ditto.....	100	2	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	3	0	6	0	Mushrooms.....	10	0	0	0
Asparagus.....	100	0	0	0	Mustard & Cress, punnet	0	2	0	0
French.....	6	0	12	0	Onions.....	10	0	0	0
Bcaus, Kidney.....	100	1	6	2	pickling.....	10	0	0	0
Beet, Red.....	10	0	2	0	Parsley per doz. bunches	0	4	0	0
Broccoli.....	0	9	1	6	Parsnips.....	10	0	0	0
Cabbage.....	10	0	1	6	Peas.....	10	0	0	0
Capsicums.....	100	0	0	0	Potatoes.....	10	0	0	0
Carrots.....	0	6	0	0	Kidney.....	10	0	0	0
Cauliflower.....	10	0	0	0	Round.....	10	0	0	0
Celery.....	10	0	2	0	Radishes.....	10	0	0	0
Coleworts.....	10	0	2	0	Rhubarb.....	10	0	0	0
Cucumbers.....	10	0	0	0	Salsafy.....	10	0	0	0
Endive.....	10	0	0	0	Savoy.....	10	0	0	0
Fennel.....	10	0	0	0	Scorzonera.....	10	0	0	0
Garlic.....	10	0	0	0	Sea-kale.....	10	0	0	0
Herbs.....	10	0	0	0	Shallots.....	10	0	0	0
Horsradish.....	10	0	0	0	Spinach.....	10	0	0	0
Leeks.....	10	0	0	0	Tomatoes.....	10	0	0	0
Lettuce.....	10	0	0	0	Turnips.....	10	0	0	0
					Vegetable Marrows.....	10	0	0	0

POULTRY MARKET.—JUNE 18.

ALTHOUGH prices have not greatly varied during the past week, yet there are not wanting indications that a large supply is at hand.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	5	0	0	0	Pheasants.....	0	0	0	0
Smaller ditto.....	5	0	5	6	Partridges.....	0	0	0	0
Chickens.....	4	0	4	0	Hares.....	0	0	0	0
Geese.....	6	0	6	6	Rabbits.....	1	5	1	6
Green Geese.....	0	0	0	0	Wild ditto.....	0	9	0	10
Duckings.....	4	0	4	6	Pigeons.....	0	9	1	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 26—JULY 2, 1873.	Average Temperature near London.			Rain in 43 years	Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
26	TH	Spalding Horticultural Show.	74.3	49.2	61.7	20	4	48	19	48	41	4	7	10	2	2	31
27	F		72.8	48.2	60.5	15	47	3	19	8	48	5	37	10		2	44
28	S	Royal Horticultural Society's Bath Show	73.7	49.1	61.4	16	47	3	19	8	59	6	59	10		2	56
29	SUN	3 SUNDAY AFTER TRINITY. [closes.	73.2	48.5	60.8	12	48	3	19	2	10	8	16	11		3	8
30	M	Meeting of Royal Asiatic Society, 3 P.M.	73.1	48.3	60.7	15			18	8	1		35			3	20
1	TU	Grantham Horticultural Show.	74.8	50.8	62.8	20	49		18	8	0	10	42	11	7	3	32
2	W	Royal Horticultural Rose Show, and Committee Meetings.	73.4	51.2	62.3	17			18	8	39	11	54	11	D		183

From observations taken near London during forty-three years, the average day temperature of the week is 73.6°; and its night temperature 49.3°. The greatest heat was 93°, on the 27th, 1826; and the lowest cold 34°, on the 28th and 29th, 1863. The greatest fall of rain was 1.18 inch.

ORNAMENTAL PLANTING.—No. 4.



To render these notes as comprehensive and useful as possible, it is requisite that they should embrace the planting of such features of ornamental grounds as are not usually met with, as well as those of an ordinary character. Before proceeding to the consideration of mixed borders and groups I will, therefore, request the reader to accompany me to a secluded glen or dell with steep, high, winding banks that spring upwards abruptly in picturesque irregularity from each side of a narrow, rocky, watercourse, worn and furrowed into a thousand curious hollows and channels by the "babbling brook" that is the glen's great charm, the one animated feature of its still life, such as it is always desirable to secure whenever we try to imitate natural scenery of this description. Let not anyone suppose it possible even in the faintest degree to imitate the wild grandeur or majestic aspect of a rocky highland glen; every feature of the scene that I now wish to portray is so minute and trifling in comparison, that the only possible similarity would be not in the physical formation, but in the plants and trees.

Given, then, the glen, let us proceed with the consideration of how it may be most advantageously planted, and what are the best kinds for such a purpose. The groundwork of the planting ought certainly to be arranged on the principle of massing, and here the common Holly takes a leading position, so hardy is it, so flourishing upon the sides of the steepest hillside, and under the deep shade and drip of umbrageous trees, and so fine is the effect of high banks clothed with its deep, rich, glossy foliage, that it may well form the staple of our planting. Mingled with the Hollies, and in large masses by itself, we place that

"Flower of the wild, whose purple glow
Adorns the dusky mountain's side"—

the Heather (*Calluna vulgaris*), which is so beautiful when in flower as to fully atone for its dull appearance at other times. No trifling patches of it will serve to produce the effect I aim at, but there must be bold, spreading, irregular masses, meeting and interspersed among the adjoining growth of trees, Ferns, or shrubs; for there should be no sharply-defined lines of demarcation, no formal angularity of outline in such a scene, but a blending of growth and a certain air of the wild irregularity of nature.

Suitable positions will occur for groups or single plants of other varieties of Heath; thus, near the sides of the path we may place *Erica Tetralix* with its lovely bells of a delicate pink hue; its white variety is also worthy of a prominent place. Patches of the more common *Erica cinerea*, the deep-coloured *Menziesia polifolia*, and the shrub-like *Erica mediterranea* merit a place, and for an early display in spring, the bright pink *Erica carnea* is unrivalled. Ferns, Lichens, and Mosses should fringe the stream, and spread their graceful forms and green enamel among the rocks; then, too, an occasional mossy

knoll or bank has an agreeable effect, more especially when the cool air of the glen is sought after during the hot days of summer; then, as the path winds along from side to side, over an occasional rustic bridge, under the shade of overhanging branches of spreading Beech or drooping Birch, while Larch and Pinuses cluster or stand out singly high up upon the crests of the glen's steep sides, each feature, each cool grot or mossy cell, is doubly appreciated. In the hottest, driest summer, when plants that are fully exposed to drought present a parched and starved appearance, here all remains green and flourishing. It must, however, be very apparent, that although at such a time the contrast to most other scenes would be more forcible and striking by its peculiar freshness and beauty, yet it continues almost equally attractive at all seasons of the year.

The common Bracken (*Pteris aquilina*) is another excellent plant for massing. In favourable situations it forms a dense thicket of the most beautiful description; the noble fronds upwards of 9 feet high surpass all other of our native Ferns in dignity of aspect, excepting, perhaps, the *Osmunda*. It has a fine effect either alone or mingled with the Holly and Heather. *Berberis Aquifolium* also makes a good mass; it is very hardy, and has strong claims upon our notice for its value as a decorative plant; its abundant bright yellow flowers produced in bold dense clusters are followed by green berries, which ripen into a deep purple hue, and the spreading growth is thickly clothed with deep green glossy foliage, which becomes purple, and often crimson, in autumn.

It does not appear desirable to extend the list of plants for massing in the glen. *Rhododendrons* might certainly be introduced with good effect, and a bold group of *Yucca recurva* upon some prominent curve or position of importance would tell well; but the Holly, Fern, and Heather harmonise so well, and large masses of them are so admirably in keeping with this scene of semi-wildness, that they ought certainly to predominate very largely. Ample relief and variety may be imparted by an admixture of such single specimens or small clumps as there may be space for—of *Pampas Grass* and other Grasses of a tall and stately character, such as *Arundo conspicua*, *Holcus saccharatus*, and *Erianthus Ravennæ*. A few flowering shrubs, too, form an agreeable feature. Of such I would select the single and double varieties of both pink and white *Crægeus*, as well as the newer double crimson kind; *Laburnum*; *Gueldres Rose* (*Viburnum Opulus*); *Cytisus albus*, the graceful white Broom of Portugal; *Cytisus Scoparius*, the common yellow Broom; the cream-coloured *C. pallidus*; and the yellow Spanish Broom, *Spartium junceum*. To these may be added *Philadelphus grandiflorus*, *Pyrus Aucuparia* (the Mountain Ash), and of *Lilæe* the common white kind, and the large, rich purple variety, Dr. Lindley. An occasional Birch tree near the side of the stream or upon the steep slopes makes a pleasing break. Larches, too, may be introduced singly or in clumps. The space, however, is usually too much restricted to admit of many tall-growing trees, which should, therefore, be introduced with

much caution, most of them being planted along the highest points, where the peculiar vegetation of the glen is met and blends with that of the wild underwood.

Most small natural glens do not end abruptly, but gradually expand into a wide-spread valley, as though at some remote age a mighty flood of water rushing through and deepening the glen's narrow gorge had burst forth from the restraining bounds of its rocky sides with accumulated force, spreading over the softer soil beyond, wearing and conveying it away to some distant point, that is still perchance covered by the waters of old ocean. It is just at this junction of glen and valley that I would form a Beech grove, planting the Beech trees 80 feet apart, and filling the intermediate spaces with Larch, to be thinned and removed gradually as the permanent trees might require space. The extent of the grove should depend upon the features beyond it; if it could advantageously be continued to a point commanding a pleasing view, that would be the best and safest guide for the planter. From seats at the lower boundary there might perhaps be a pleasing vista of the waters of a lake with the soft swell of turf slopes, broken by a few noble specimens of Oak, Elm, or Lime, and if in the background a glimpse could be had through richly wooded banks of a lofty range of distant hills the scene would be perfect.

The pathway through the glen should be designed to command at different points full views of its most interesting features. It takes no formal line, nor is it kept strictly on one side, but following the windings and curves it leads from side to side across rustic bridges or stepping stones. The bridges should be made of undressed wood. Larch with the bark left on is very suitable, or, if the span is narrow, flayed Oak wood might be used, and Ivy trained along the sides and upon the handrails. A good position for a bridge is below a waterfall, not close to it, but at a little distance down the glen, from whence the play and dash of the water may be seen to the best advantage. For any steep ascent very neat and durable wooden steps can be made of circular blocks of Larch or Oak about a foot in length, set on end side by side, and kept securely in position by fastening slabs of Larch across the front of each step, and by spandrils of the same material at the sides.—
EDWARD LUCKHURST.

THE ROYAL HORTICULTURAL SOCIETY'S BATH SHOW.

The ample descriptions that have already appeared in the Journal, aided by the plans which have been published, will have made the general aspect of the Show ground clear to any who have taken the trouble to read and examine them. It will be sufficient, then, to say that of all the sites which have been chosen for the provincial exhibitions, none can for a moment compare with the present. Bath itself is a fair place, and the Victoria Park is one of its fairest spots, and yet so convenient to the very heart of the city, that a ten-minutes walk brings one from all the principal hotels to the Show ground; while, should the weather prove more unfavourable than it is at present, the sloping character of the ground will prevent that "Slough of Despond" which Birmingham presented last year.

All those who have attended these provincial Shows are now pretty well acquainted with their general aspect. The large tent (60 feet longer this year than before), arranged on the plan of which the Royal Botanic Society set the example; the plants placed on the ground, sloping and terraced banks, the waterfall, and the fountain, are now what are naturally looked for. To those who have not witnessed any of these Shows one may say that the effect is very fine as looked at from behind the waterfall, whence the eye can range over the whole contents of the tent—sadly marred, however, to our mind by the very substantial framework on which the canvas is placed; and one sighs for a time when we shall see either iron substituted for it, or some method devised by which this defect may be remedied. In this tent have been placed the magnificent plants of Messrs. Baines and Cole, the exhibits of Williams, Veitch, Bull, Bell & Thorpe, and others, the whole forming a marvellous display of the wealth of colouring and of foliage that the realm of Flora so lavishly displays. The same long and too-narrow tent where the cut flowers are exhibited is filled from end to end. In the tent for vegetables is the finest collection of vegetables we have ever seen displayed; while all around are tents, horticultural constructions, and contrivances of every description.

On every side one meets with well-known faces; for what a Church Congress is to the parson, the Social Science Congress to the political economist, the Royal Agricultural Society's meeting to the farmer, that is this provincial Exhibition of the Royal Horticultural Society to the gardener of every description, amateur, nurseryman, or gentleman's gardener—a place where one is sure to meet a large number of those interested in the same pursuit, to renew former acquaintances, and to make new ones; and this has become now so thoroughly recognised a fact, that it forms to many one of its most attractive features. Many of us are utterly *blaze* with flower shows, they can add no new sensation; but it is pleasant to meet with those who are equally—well, let us say it—mad with one's self, to exchange brotherly words of good will, to hear many things discussed, and to be a sharer in that geniality which ought to, and does as a rule, characterise those who have to deal with the lovely things connected with horticulture. We lack this year the presence of Royalty; for whatever might be the inclination of any of our Princes to be present with us, the Shah absorbs all their attention, and they cannot move from their post of duty. Well, there is this to be said: If the Show succeed it will be simply on the grounds of horticulture. Prince Arthur, no doubt, brought crowds to Birmingham last year, but no Prince attracts them to Bath this year; and so, whatever success be obtained will be due to the pure love of horticulture, and this, we know, has long characterised Bath and its neighbourhood.

The Exhibition was opened by a procession formed at the park gates at half-past twelve, and which proceeded to the grand tent, and walked entirely round it, after which it came again to the front of the building facing the city, and the principal members of which it was composed then took a place on the summit of the rising plot of ground on which are staged Mr. Young's collection of trees.

The following address to the Lord Lieutenant of the county was then read:—

"MY LORD,—

"At the request of the Local Committee of the Royal Horticultural Society, I beg to offer the sincere thanks of the city of Bath for your Lordship's presence and assistance on this occasion.

"We were much gratified by the decision of the Council to hold its annual meeting within our borders. We esteemed it a great privilege to be allowed to see, on the largest and most beautiful scale, what had been done for horticulture in recent years. We also felt assured that the Exhibition which it was proposed to hold—so comprehensive in its objects—would be highly beneficial to our neighbourhood, by stimulating a desire for improved culture among all classes of society.

"With these feelings we gladly entered upon the various duties assigned to us. We trust that the site of the Exhibition will be found convenient and satisfactory to the visitors. We are thankful to the numerous friends who have enabled us to raise a larger amount in prizes than has been raised on any previous occasion. Favoured by this circumstance, by the admirable arrangement of the Council, and by great individual skill on the part of their Superintendent, we have now a display of plants, flowers, and structures, which will be abundantly gratifying and instructive. And now, my Lord, I have only to add that among our greatest advantages is that of being able to welcome in the Lord Lieutenant, and in the High Sheriff of Somersetshire, the representatives of our beloved Sovereign in the county to which we belong. We consider it a most happy augury that the Exhibition is opened under such auspices; and we trust our ancient city will prove itself not unworthy of the honour thus conferred upon it."

In reply to this address, Lord Cork said, "I beg sincerely to thank you for the address you have presented to me on behalf of the Local Committee of the Royal Horticultural Society, and to assure you that, connected as I am with this great county, it is a gratification to me to bear a part in this day's proceedings. I entirely concur in the hope you have expressed that the Exhibition which I have the honour this day of opening may be beneficial to the lovers of horticulture in this neighbourhood, and I feel sure that this has been the chief object of the promoters in this undertaking. In asking me, and likewise the High Sheriff for the county to appear in official costume, I recognise a desire, on the part of this ancient city, to seize on every occasion of testifying their devoted loyalty to the throne, and their respect for all offices of dignity and importance emanating directly from the crown and representing its authority. I heartily join with you in expressing my obligation to the Council of the Royal Horticultural Society for holding its meeting within the borders of your city, and I trust it may prove in every way success-

ful, and fully accomplish the objects adverted to in your address."

Accompanied by a flourish of trumpets the Lord Lieutenant then declared the Show open.

PLANTS AND FLOWERS.

STOVE AND GREENHOUSE PLANTS.—Of these there are numerous collections, though in general the plants are not so large as those usually exhibited at the metropolitan shows. Messrs. E. Cole & Son have in Class 1 (collection of twenty), a very well bloomed group, running for the most part about 2 feet in diameter, and containing excellent specimens of *Vinca rosea alba*, *Ixora amboynensis*, the white *Ixora Colei*, *Clerodendron Balfourianum*, *Allamanda Hendersoni*, *Azalea Extranii*, *Erica Candolleana*, *Erica eximia superba*, and *E. ventricosa tricolor*. A first prize was awarded.

In collections of nine (Class 2), Mr. Morse, gardener to W. P. Baker, Esq., Brislington, Bristol, sends fine specimens of *Azalea Lateritia superba* and *Barclayana*, *Dipladenia amabilis*, very good; a fine specimen of *Allamanda Hendersoni*, a large *Ixora amboynensis* not yet at perfection, also a large *Ixora amboynensis superba* and *Pimelea Hendersoni*, 4 feet in diameter and quite a mass of bloom. The last two, besides forming part of the group, are also shown for the Veitch Memorial prize for the best specimen stove and greenhouse plants respectively. Mr. W. C. Drummond, Weston Road, Bath, also sends a group, in which are good plants of *Stephanotis floribunda* and *Genetlylis Hookeriana*; whilst from Mr. Cypher, Queen's Road Nursery, Cheltenham, come *Dipladenia amabilis* trained on a cylindrical wire trellis and in fine bloom, *Allamanda grandiflora* with numbers of its yellow flowers, though these are not individually large; a very good *Genetlylis tulipifera* well flowered, but a forest of sticks; an *Ixora*, and a good specimen of *Anthurium Scherzerianum*. Mr. Morse is first, Mr. Cypher second, and Mr. Drummond third.

In Class 3, groups of six, Mr. J. E. Marsh, gardener to J. O. Bacchus, Esq., Norwood House, Binswood, Leamington, has capital specimens of *Allamanda Schottii*, *Stephanotis floribunda*, *Kalosanthes coccinea*, *Phenocoma prolifera Barnesii* and *Clerodendron Balfourianum*, both well grown and well flowered. Mr. T. King, gardener to R. Valentine Leach, Esq., Devizes Castle, and Mr. W. Carmichael, gardener to H. W. Tugwell, Esq., Crowe Hall, Bath, also send groups. From Col. Taylor comes a group, in which we noticed the white *Echites boliviensis*, well furnished with its orange-throated, white, *Convolvulus*-like flowers. Mr. Marsh is first.

For the local special prize for the best specimen stove plant Mr. Baines, gardener to H. Micholls, Esq., Southgate, exhibits a specimen of *Allamanda cathartica*, some 4 feet through. *Bougainvillea glabra*, clothed with its rose-coloured bracts, is shown by Mr. Gale, who takes the first prize; while Mr. A. Morse, gardener to W. P. Baker, Esq., is second with an *Ixora*, and Mr. J. Brickell, gardener to J. Orred, Esq., Marshfield, Chippenham, is third with *Euphorbia splendens*. An equal second prize was awarded to Mr. Baines.

In competition for the prizes for the best specimen greenhouse plants Mr. Baines sends a splendid plant of *Phenocoma prolifera*, blooming to perfection, and beautifully furnished to the base; from Mr. Gale, gardener to W. Dobson, Esq., Oakwood, Bath, comes a remarkably good specimen of *Genetlylis Hookeriana*; and from Col. R. L. Taylor, Fern Lodge, Weston Road, Bath, a good plant of *Pimelea diosmefolia*. Mr. Baines is first, Col. Taylor second, and Mr. Gale third.

The best specimen of *Anthurium Scherzerianum* is that of Mr. T. Baines, gardener to H. Micholls, Esq., Southgate, which has fifteen fully-expanded spathes, and three more opening. The second best is that of T. M. Shuttleworth, Esq., which has three more, but not nearly so fresh.

MIXED GROUPS OF FLOWERING AND FINE-FOLIAGED PLANTS.—These constitute the most striking feature in the great tent, the plants shown by the two leading competitors, Messrs. Cole and Mr. Baines, being of extraordinary size and merit. Mr. Baines and Messrs. Cole have for several years stoutly contested at the Society's country meetings the palm in the class for ten stove and greenhouse plants in flower and the same number of fine-foliaged plants, and always with honour to themselves, and often it has been a matter of extreme difficulty for the Judges to decide between their respective claims. On this occasion Messrs. Cole have taken the lead with, of flowering plants, one of the best-bloomed examples of *Erica Massoni* major we have ever seen, and which is nearly 4 feet in diameter; *Dipladenia amabilis* in a 14-inch pot, with 120 trusses of flowers which are perfection in their freshness; a grand plant of *Genetlylis tulipifera*; the white-flowered *Ixora Colei*, 4½ feet through; *Phenocoma prolifera Barnesii*, even exceeding the last-named in size, and in splendid bloom; *Erica Candolleana*, very fine; *Anthurium Scherzerianum*, with three dozen good spathes; *Allamanda grandiflora*; scarlet *Azalea Brilliant*, 6 feet high; *Iveryana*; and *Allamanda grandiflora*, in great beauty. Of fine-foliaged plants Messrs. Cole have *Cycas revoluta*, 10 feet through, fruiting;

noble specimens of *Phœnicophorium seychellarum* and *Verschaffeltia splendida*; a remarkably fine specimen of *Cocos Weddelliana*; a very large specimen of the variegated New Zealand Flax, *Croton variegatum* and *C. pictum*; *Gleichenia flabellata*, a magnificent specimen; and *Cyathea dealbata*. Among these we recognised several of the plants which formed part of the Manley Hall collection. Mr. Baines took the second place with a group which has rarely been equalled, among which were remarkably fine specimens of *Erica Shannonia*; *Franciscia confertiflora* in magnificent bloom; *Azalea Coronata*, forming a splendid mass of rosy crimson blossom; *Ixora javanica*, very fine; a large and very fine plant of *Phenocoma prolifera*, *Ixora coccinea*, *Sarracenia* such as are only exhibited by him, *Cocos Weddelliana*, *Crotons*, *Dasyllirion acrotrichum*, and *Ixora javanica* especially fine. Mr. Baines was awarded the Veitch Memorial prize for the most meritorious specimen stove plant for the fine *Franciscia* in this group, and he took the corresponding Veitch prize for the *Phenocoma*. Mr. Nelson, Stapleton Place and St. Michael's Hill Nurseries, Bristol, sends a fine *Alocasia metallica* and *Maranta roseo-picta*, and very good examples of *Livistona borbonica*, *Clerodendron Balfourianum*, *Pimelea mirabilis*, &c. In groups of six Mr. A. Johnson, gardener to the Marquis of Ailesbury, Savernake, is first with *Dipladenia amabilis*, *Allamanda Schottii*, *Alocasia metallica*, *Alocasia Lowii*, and *Maranta Veitchii* very good. Second comes Mr. T. King, gardener to R. V. Leach, Esq., Devizes Castle, with a very good group; and third, Mr. Carmichael.

ORCHIDS.—Although there is not a very large show of these, some of the specimens which we shall have to notice are altogether out of the common run, especially those of Mr. Gurney. Mr. Williams, of Holloway, is in the front in the open class for nine, with a fine *Vanda tricolor*; *Aërides odoratum majus*; *Anguloa Clowesii*, not arrived at its colour; *Cattleya Mossiae superba*, fine; *Oncidium Philipsonianum*, with a dozen spikes; *Trichopilia crispa*, &c. Mr. Bull is second; Messrs. Maule & Son, are third.

The Veitch Memorial prize for the best specimen Orchid, also the first prize for the same, went to Mr. Gurney Keele, gardener to W. Gore Langton, Esq., Newton Park, Newton-St.-Loe, Bristol, for *Saccolabium guttatum* with no less than twenty-nine racemes of flowers, most of which are also unusually fine. Such a plant is a marvel; such a plant we have never before seen, and we rejoice that Mr. Keele will through it reap something like a fair reward for his skill in its culture. The second prize for the best specimen Orchid is for *Odontoglossum Insleyayi leopardinum*, from Mr. W. Ball, having sixteen flowers. In the amateurs' class for six, Mr. Baines is first with a magnificent potful of *Cattleya Mossiae*, a beautiful specimen of *Dendrobium densiflorum*, *D. Devoniana* with eleven long racemes, and a good *Cypripedium barbatum*. Second comes Mr. Gurney with another specimen of *Saccolabium guttatum* with fourteen racemes; *Aërides odoratum maximum*, remarkably fine; *Vanda tricolor*, good; and *Saccolabium curvifolium*, fine. Third, Mr. Perry, gardener to J. W. Miles, Esq., Shirehampton; fourth, Mr. J. Howard, gardener to the Rev. J. G. Fussell, Frome. In the nurserymen's class for six, Mr. B. S. Williams takes the lead with a fine pan of *Cypripedium barbatum superbum*, *Thunia alba* with nine flowers, *Cattleya Mossiae* splendid, *Cypripedium Stonei* with thirteen slippers, and a remarkably fine *Aërides Lobbi*. Messrs. Maule & Sons, Bristol, are second; and Mr. Drummond, Bath, takes a fourth prize.

HEATHS are far behind those shown at the London exhibitions. The best six in the nurserymen's class come from Mr. Cypher, Cheltenham; the second best from Mr. Drummond, of Bath. Among amateurs Mr. Baines is first for six with fine specimens of *E. æmula*, *venosa*, *obbata*, and others. Mr. King, gardener to R. V. Leach, Esq., Devizes Castle, is second, and Col. Taylor third. For nine, Mr. Carmichael, gardener to H. W. Tugwell, Esq., is second. The best four are from Mr. Keel, gardener to Col. Landon, Wells Road, Bath. Second comes Mr. King, gardener to R. V. Leach, Esq. In the class for the best specimen Heath, a plant of the waxy-white *Erica obbata*, not, however, as yet arrived at its full beauty, is shown by Mr. Baines. The second best is a small plant of *Cavendishii* from Mr. Morse, gardener to W. P. Baker, Esq., Brislington.

ORNAMENTAL-FOLIAGED PLANTS.—In the class for nine fine-foliaged plants, Mr. J. Cypher, of Cheltenham, who is first, has a noble plant of *Cycas revoluta*, 8 feet in diameter, a fine *Phœnicophorium seychellarum*, *Lantana horbonica*, and good specimens of others. Mr. W. Drummond, Bath, is second, showing among others a very good pyramid of *Panicum variegatum*. For six fine-foliaged plants (amateurs) the prize went to Mr. J. E. Marsh, gardener to J. O. Bacchus, Esq., Binswood, Leamington. The best specimen fine-foliaged plant is *Sarracenia flava*, one of the North American Side-saddle Plants, and one of the finest specimens of the genus which Mr. Baines has ever shown. Second comes Mr. Gale, gardener to W. Dobson, Esq., Oakwood, Bath, with a magnificent plant of *Alocasia metallica*, of which every leaf is perfect.

Palms.—There are but few of these shown in the classes

specially assigned to them. The best six come from Mr. Wimssett, Ashburham Park Nursery, Chelsea. Among them are good plants of *Areca lutescens*, *Astrocaryum mexicanum*, and *Areca Baureri*. The second prize for six goes to Mr. W. Bull, of Chelsea, for a group in which are *Areca lutescens*, *Kentia Moorei*, and other scarce sorts. The third prize went to Messrs. Maule & Sons, Bristol, for larger specimens, among which is a male *Cycas revoluta*, which had thrown up a cone. Mr. Williams and Messrs. Carter & Co. also exhibit.

Dracenas and Cordylines.—The best four are exhibited by Messrs. Carter & Co., and consist of the dark olive and purple-bronzed *Macleayi*, *Regina* finely coloured, *Guilfoylei*, and *Cheloni* very fine. The second prize was awarded to Mr. B. S. Williams, of Holloway, for a very fine plant of *Dracena Veitchii*, and others already named. Mr. Bull exhibits *D. Regina*, *D. speciosa*, *D. amena*, and *D. splendens*, all of which are very handsome, and which must surely have been overlooked, as no award was made.

Crotons.—The best specimen *Croton* comes from Mr. R. T. Veitch, nurseryman, Exeter, and is a well-coloured plant of *C. variegatum*, about 5 feet in diameter, and as much in height from the ground. The best four new *Crotons* come from Messrs. Veitch, of Chelsea, and consist of finely coloured examples of *C. undulatum*, *Veitchii*, *Weismanni*, and *Johannis*. The second-prize four come from Mr. Perry, gardener to J. W. Miles, Esq., Shirehampton. Mr. Bull also has a second prize for *majesticum*, *undulatum*, *Weismanni*, and *spirale*.

Alocasias.—In the class for the best three *Alocasias*, the first position was taken by Mr. Williams, of Holloway, with *A. metallica*, large specimen; *A. Sedeni*, with leaves 18 inches by 10 wide; and a very fine specimen of *A. intermedia*. Mr. Drummond is second with small plants.

Begonias.—Very few are shown. The first prize goes to Mr. Drummond, of Bath, for small plants.

Caladiums.—As in the case of *Begonias*, but few are shown. The best six come from Mr. Marsh, gardener to J. O. Bacchus, Esq., Binswood, Leamington, and include good but not large plants of *Wightii*, *Chantini*, *Houlletii*, and *Neumannii*.

FITCHER-PLANTS.—The best three are those from Mr. Baines, and consist of fine examples of *S. flava* and *variolaris*, with *purpurea*.

FERNS.—As compared with the Exhibition at Birmingham last year and that at Nottingham the year before, there is a great falling-off in the numbers of Ferns both exotic and British, and especially the latter. Mr. Lowe exhibits but few, and Mr. Mapplebeck not at all. As regards exotic Ferns also, the specimens are neither so large nor so fine as those we find at the London show.

Exotic Ferns.—The best twelve in the amateurs' class come from Mr. J. Brickell, gardener to J. Orred, Esq., Ashwick Hall, Marshfield, Chippenham, and consist of good examples of *Adiantum farleyense*, *A. cuneatum*, *Lomaria gibba*, and *Gymnogrammas*. The second prize was taken by Mr. Howard, gardener to the Rev. J. G. Fussell, The Chantry, Frome, who has good plants of *Dicksonia antarctica*, *Gleichenia spelunca*, *Golden* and *Silver Ferns*. First for nine is Mr. J. Cypher, Queen's Road Nursery, Cheltenham; second, Mr. W. E. Drummond, Bath; third, Mr. D. Wicks, gardener to the Rev. C. Kemble, Vellore, Bath; and fourth, Messrs. Maule, of Bristol. The best six come from Mr. A. Merse, and include good plants of *Adiantum cuneatum*, *Lomaria gibba*, and *Adiantum macrophyllum*. The second prize is taken by Mr. King, gardener to R. V. Leach, Esq., Devizes Castle. The best specimen exotic Fern (exclusive of *Adiantums* and *Tree Ferns*) is *Gleichenia rupestris*, shown by Mr. Baines, measuring fully 5 feet in diameter. T. M. Shuttleworth, Esq., is second with *Gleichenia flabellata*.

Tree Ferns.—A first prize for six *Tree Ferns* was awarded to Mr. Bull, of Chelsea, for *Cyathea Dredgei* and good plants of *Dicksonia antarctica*. Another first prize goes to Mr. Williams, of Holloway, for noble specimens of *Dicksonia antarctica* and *Cyatheas*. The best pair are *Cyathea dealbata*, 8 feet from the ground, and as much in spread of frond, shown by Mr. W. Perry. The second prize goes to Messrs. Maule, of Bristol.

British Ferns.—For twenty distinct kinds in the nurserymen's class, the first prize goes to a nicely arranged even group of well-grown plants, with a large proportion of varieties of the graceful *Lady Fern*; *Athyrium F. f. pulcherrimum*, very beautiful, with other crested and tasselled varieties; it is sent by Mr. E. Pilgrim, Pitville Nursery, Cheltenham. Messrs. W. Hopwood & Sons, of Cheltenham, have the second prize for a meritorious group, but the plants are small; Mr. Drummond, Weston Road, Bath, is third. In the open class for ten Mr. Pilgrim is again first. Here there is a grand specimen of *A. F. f. plumosum*, and a glass-case full of *Tricomanea radicans*. Mr. E. J. Lowe, of Nottingham, is second. In this collection is a singular variety of *Lastrea Filix-mas* named *angustata*. The third prize goes to Messrs. W. Hopwood & Son. In the amateurs' classes the collections are very numerous, and the quality of the plants may be best understood when it is stated that Mr. Lowe,

of Nottingham, holds a subordinate position. The most noteworthy specimens are *Adiantum Capillus-Veneris perfectum*, and a pretty form of the same; a beautiful pan of *Hymenophyllum tunbridgense*; *Athyrium F. f. var. clarissima* from North Devon with large fronds, but the segments are finely divided; and a grand box of the Killarney Fern, the fronds in fine health. For twenty, Capt. A. M. Jones, Ringwood House, Chifton, is first; Mr. E. J. Lowe second; Mr. J. Howard, gardener to the Rev. J. G. C. Fussell, Frome, is third; and the fourth prize goes to T. M. Shuttleworth, Esq., of Preston. For twelve British Ferns, E. J. Lowe, Esq., and Captain Jones are respectively first and second. Of new British Ferns E. J. Lowe, Esq., sends a large collection.



Trichopilia suavis (Bot. Mag.). For description see page 509.

Adiantums.—A very beautiful and well-grown group of six from E. J. Lowe, Esq., Highfield House, Nottingham, is awarded the first honours. It consists of *A. cuneatum*, *A. Capillus-Veneris* kalon, *A. farleyense* very fine, *A. scutum*, *A. Lowii*, and *A. Capillus-Veneris*. Mr. J. Howard, gardener to the Rev. J. G. Fussell, Frome, is second with another excellent group. The prizes offered for the best specimens of *Adiantum farleyense* go to Mr. Bannister, gardener to G. H. Ames, Esq., Westbury-on-Trym, Mr. Drummond, of Bath, Mr. Merse, and T. M. Shuttleworth, Esq., each of whom has a remarkably fine specimen of this lovely Fern. The best specimen *Adiantum*, not *A. farleyense*, is *A. cuneatum* from Mr. J. Howard, nearly 4 feet in diameter. The second best is also *A. cuneatum* from Mr. King, gardener to R. V. Leach, Esq.

LYCOPODS.—The only six come from Messrs. Bell & Thorpe, Paddock Nurseries, Stratford-on-Avon. There are neat, very creditable pans of *Selaginella apoda*, *formosa*, *serpens*, and *Martenii*.

AGAVES, CACTI, AND SUCCULENTS.—The best collection of six distinct *Agaves* is that shown by Mr. Croucher, gardener to J. T. Peacock, Esq., Sudbury House, Hammersmith, and consists of *Agave Schidigera*, with its leaves beset at the edges with shag-like shreds, the glaucous, thick, fleshy-leaved *A. applinata*; *A. ensiforme*, rare; *A. Regeli macrodontha*, very fine;

A. filifera nigrescens, and *A. viridissima*. All these are remarkably fine specimens, and do credit to Mr. Peacock's unrivalled collection. Second comes Mr. B. S. Williams, of Holloway, who also possesses very extensive and fine collections of these and cognate plants. *A. Ghiesbreghtii obscura*, *A. gemmiflora filifera*, and *A. Regelii latifolia* are the most remarkable. Mr. W. C. Drummond, Bath, is third. Mr. Bull, of Chelsea, also exhibits in this class. In the class for collections of not more than twenty ornamental Cacti the prizes were not awarded on the first day. Mr. Croucher, gardener to J. T. Peacock, Esq., Sudbury House, Hammersmith, sends a group of remarkable specimens, many of the species being very rare. Mr. Dutton, Bath, also sends a fine group, in which are *Echinopsis multiplex*, with three beautiful pale rose-coloured flowers; *Echinocereus multicastratus*, also in flower, and a variety of curious forms. Two other good collections are shown. The best collection of Succulents is that of Mr. Croucher, Mr. Peacock's gardener. Mr. Drummond, of Bath, also sends a nice group, and another comes from Messrs. Bell & Thorpe.

SUBTROPICAL PLANTS.—For a collection of those suitable for bedding, Messrs. Bell & Thorpe take a second prize; these plants are small, and do not call for special remark.

HARDY AND VARIEGATED-LEAVED PLANTS FOR BEDDING.—The best collection of twenty-five comes from Messrs. Bell & Thorpe, Stratford-on-Avon, who also send a lot of twenty, which, however, not being all variegated, are not eligible for a prize. Mr. Drummond, of Bath, is second.

HARDY PERENNIALS AND ALPINE PLANTS.—A fine collection of twenty hardy variegated and alpine plants shown by Mr. J. S. Ware of Tottenham, takes the first prize. *Sedum japonicum foliis-variegatis*, and a fine variegated form of *Funkia undulata*, *Spiraea Ulmaria* with yellow variegation, *Arundo Phragmites aurea* striped with yellow and white, are the most conspicuous. For groups of not less than twenty-five alpine plants, equal first prizes are given to Mr. T. S. Ware and Messrs. Garaway, of Bristol; Mr. Drummond, Bath, being third. Among these we more especially notice *Ophrys arachnites*, *Pentstemon acuminatus*, *Armeria alpina grandiflora* with deep rose-coloured flowers, and the pretty Bell-flower, *Campanula carpatica*. For twelve hardy perennials in 12-inch pots, Mr. T. S. Ware, Hale Farm Nursery, Tottenham, shows an excellent group, in which we noticed very fine examples of *Orchis foliosa* and *Funkia ovata marginata*.

CUT FLOWERS.—For twenty-four bunches Mr. Ware is first, and Mr. Perkins, of Leamington, second. Mr. G. Cooling, of Bath, takes a third prize. For twelve bunches Mr. J. Lakin, Chipping Norton, is first, and Mr. K. Bryan, Beach Bitton, is second. Among collections of twelve bunches of cut flowers staged as Roses Miss M. A. Baines, Southgate, is first with the pure white *Calanthe veratrifolia*, *Dendrobium densiflorum*, *Ixora Colei*, *Cattleya Mossiae*, &c. Second comes Mr. David Lumsden, Bloxholm Hall, Sleaford, with a box containing nice Heaths and Orchids. For twenty-four bunches Messrs. E. Cole & Sons are first with a very fine lot of *Ixoras*, Heaths, and some Orchids. Second comes Mr. W. Cross, Melchet Court, Romsey; and third Mr. Perkins, nurseryman, Leamington.

NEW PLANTS.—Messrs. Backhouse, of York, send a new species of *Calochortus* with large yellow flowers, blotched and veined with dark brown at the base of each petal. For this a first-class certificate was awarded; *Phlox glaberrima*, a pretty species with light purplish rose flowers; *Cyclobotria pulchella*, a free-blooming species with bright yellow flowers. From Messrs. Osborn, Fulham, comes *Imantophyllum miniatum* superbum with flowers larger and more highly coloured than in the species. From Messrs. Carter & Co. come *Echeveria secunda* glauca monstrosa, a curious cockscomb-shaped form, and *Begonia Othello*. Messrs. Paul & Son, Cheshunt, have the variegated form of the *Otaheite Orange*, noticed in previous reports. Messrs. Maule & Sons, of Bristol, exhibit a new hardy *Crataegus* or *Pyrus* from Japan, the flowers orange red; and the fruit, which is of the size of the old Golden Pippin Apple, is of a gamboge yellow, produced in clusters, and is highly perfumed. It makes an excellent preserve. Grafted on the White Thorn it succeeds in the open air in England. It was awarded a first-class certificate by the Fruit Committee.

For twelve new plants introduced by Mr. Bull, and sent out by him during the last three years, a series of prizes including six silver cups is given by him in these classes. In that devoted to amateurs Mr. T. M. Shuttleworth is first; and running him very closely is Mr. J. Croucher; Mr. W. Carmichael, gardener to H. M. Tugwell, Esq., coming in third.

In the nurserymen's class, Mr. J. W. Wimsett, Ashburnham Park Nursery, Chelsea, is first; his fine specimen of *Pandanus Veitchii* bringing him in before Messrs. Downis, Laird & Laing, of London and Edinburgh, who otherwise had a very even lot of plants. Messrs. Carter & Co., of London, are third. The best and most effective plant in all the collections is certainly *Pandanus Veitchii*. Other fine things are *Curculigo recurvata striata*, *Dracena splendens*, *Phyllanthus nivosus*, and *Dæmonorops palmarum*, a handsome Palm.

For six new plants (exclusive of Orchids) Mr. Bull, of Chelsea, takes the first prize with *Croton majesticum* and spirale; *Dracena imperialis* and *Goldiana*; *Pritchardia grandis*, a fine Palm, and *Campidium filicifolium*. Messrs. Veitch are second with *Dipladenia insignis*, a splendid rich-coloured kind, *Yucca sp. nova*, *Aralia elegantissima* very handsome, *Adiantum speciosum*, *Dracena amabilis*, and *Tillandsia Zahnii*. Mr. Williams exhibits *Anthurium crystallinum*, *Maranta Makoyana*, *Masdevallia Harryana* (an oversight which disqualified the collection), *Aralia Veitchii*, *Dracena Fraseri*, and *Adiantum elegantissimum*. Messrs. Bell & Thorpe and Messrs. Carter & Co. also exhibit, the latter likewise showing in the class for a new tender plant not in flower *Campylobotria Ghiesbreghtii variegata*, with velvety leaves variegated with reddish cream, and as if frosted. The first prize for one new Orchid in flower goes to Messrs. Veitch for *Masdevallia Harryana*, with ten flowers; the second prize to Mr. Williams for a nice specimen of *Odontoglossum Jusleyi leopardinum*, with richly coloured flowers; and a third to Mr. Bull for the same variety; a third also to Messrs. Backhouse, of York, with *Oncidium tigrinum*.

MISCELLANEOUS.—The miscellaneous groups are not nearly so numerous as usual, but some of them are of high merit, especially those from Messrs. Williams, Veitch, and Bull. Messrs. Veitch exhibit *Croton Hookeri*, one of the richest of the new yellow variegated kinds; *C. Weismanni*, beautifully marked; *Aralia Veitchii*, and *Dieffenbachia brasiliensis*, beautifully mottled. Mr. B. S. Williams has a second prize for a group of plants, in which are many recent introductions and fine specimens of Orchids, *Anthurium Scherzerianum*, &c. A group of new plants is shown by Mr. Bull, of Chelsea, and includes new *Crotons* and *Palms*, *Maranta Mayokana*, *Phyllanthus nivosus*, and other fine-foliaged plants. Mr. R. T. Veitch, nurseryman, Exeter, contributes a fine group of Heaths and other stove and greenhouse plants. Mr. Ley, of Lansdowne Road, Croydon, also sends a group of new plants. From Mr. Turner, Royal Nurseries, Slough, comes a collection of cut flowers of herbaceous *Paeonies*. To some subjects which have been omitted, as Messrs. Jackman's Clematises, and the trees and shrubs of Mr. Young, of Milford Nurseries, Godalming, and Messrs. Maule, of Bristol, we shall advert next week. We may, however, mention that Messrs. Carter & Co., of High Holborn, London, have a grand stand of seeds, roots, grasses, &c., and arranged with excellent taste and effect. We understand Messrs. Sutton, of Reading, would also have exhibited, had it not been that they are also doing so both at Vienna and at the Royal Counties Show at Southampton.

FLORISTS' FLOWERS.

FUCHSIAS.—I have not seen so fine a collection of Fuchsias for many years as that exhibited here. Some of the plants are absolute models of perfection, full of bloom, and not disfigured by formality of growth. There is one plant of *Arabella* exhibited by Mr. Mould, of Bath, which I have never seen equalled. It is one sheet of bloom, and with its weeping foliage completely covers the pot. Others nearly as good in this collection, to which the first prize was awarded for nurserymen, are *Tristram Shandy*, *Rose of Castile*, *Lustre*, and *Schiller*. Mr. Drummond is second with very small plants. In the class for six (amateurs), there are three very good collections exhibited by Mr. Lye, gardener to the Hon. Mrs. S. Hay, Clyffe Hall, Devizes; Mr. King, gardener to R. Valentine Leach, Esq., Devizes Castle; and Mr. Wilcox, Weston Villa, Weston Road, Bath. These are all well-grown and well-flowered plants. Mr. Wilcox is first with *British Sailor*, *Acme*, *Pauline*, *Marguerite*, *Roderick Dhu*, and *Duchess of Leinster*. Mr. King's (second prize), are *Starlight*, *Arabella*, *Tryme*, oh! *Duchess of Leinster*, *Excellent*, and *Rose of Castile*. Mr. Lye's six are *Schiller*, *Red Rover*, *Rose of Castile*, *Perfection*, *Mrs. Jane Dod*, and *Pauline*. In the class for four Fuchsias the plants are well bloomed and good. Mr. Wilcox is first with *Maid of Kent*. *Excellent*, *Arabella*, and *Vainqueur de Puebla*. Mr. J. A. Wilcox is second, and Mr. King third. In all these groups there was hardly an indifferent plant.

In specimen Fuchsias there are but two exhibits. The first prize was gained by Mr. Wilcox for a very old plant of *Marguerite*, the second by Mr. Lye with *Turban*.

PELARGONIUMS.—Fresh from the York Show, with its magnificent collections of Pelargoniums, the Exhibition, although good, was small in comparison with the northern Show, the plants being neither so large nor well-flowered, as this was seen in the Show Pelargoniums. In the class for nine exception must be made in favour of a very nice collection of plants, not very large, but exceedingly well flowered, which is exhibited by Mr. Charles Turner, consisting of *Imperator*, dark; *Example*, beautiful soft rosy crimson; *Duchesse de Morny*, very soft pink; *Claribel*, pure white; *Troubadour*, salmon rose; *Sultana*, dark; *Zephyr*, carmine-spotted; *Pericles*, large spot; and *Madame Charles Keteleer*, curiously-spotted French flower. Second is Mr. Marsh, gardener to J. Bacchus, Esq., Leamington. Mr. Brickell, gardener to J. Orred, Esq., Ashwell Hall, near Chip

penham, is third with plants too leggy and full of sticks. In the class for six Fancies (nurserymen), but one collection is exhibited by Mr. Turner, containing Neatness, Crystal Beauty, Victor Hugo, and East Lynn.

In the class for new Pelargoniums sent out in 1872 or 1873 but one collection is exhibited by Mr. Charles Turner, containing Prime Minister; Conquest, very brilliant; Achievement, soft lilac rose; Kingcraft, very dark. He has also Pompey, and Syren, very pretty.

In the class for six Pelargoniums (amateurs), Mr. Morse, gardener to W. P. Baker, Esq., Bromwell House, Brington, Bristol, is first with small and very compact plants. Mr. Brickell is second with Zephyr, Star, Napoleon, André, Rowena, and Gulielma; and Mr. J. Melhuish sends some older kinds, among which is Magnet, which must be at least twenty-five years old. It was a venturesome thing to set up so old a plant, though bright. In the class for six Fancy Pelargoniums (amateurs), the first prize is awarded to Amy Sedgwick, Countess of Waldegrave, Ann Page, Bridesmaid, and Jane Grey, admirably-flowered small plants. Mr. J. Evans, gardener to Dr. Abercrombie, Cheltenham, is second with very good plants, but not so dwarf in growth; and Mr. James Lye is third with smaller plants.

ZONAL PELARGONIUMS.—These are by no means good, some of the plants, notably those staged by Messrs. Bell & Thorpe, being greatly over-tied, and trained to a flat table surface. In the class for six Zonal Pelargoniums (amateurs), Mr. Thomas Carter, Brooklyn Lodge, Bristol (first prize), has Blue Bell, Madame Dufour, Rebecca, Lord Derby, Vesuvius, and White Tom Thumb. Amongst the other collections the most remarkable are Louis Veillot, very bright, Soleil, Rose Rendatier, Gloire de Corbeny. Bell & Thorpe took the first prize in the class for eight Pelargoniums with Mrs. W. Paul, Lord Derby, John Thorpe, Queen of Beauties, Charles Dickens, and Beauté de Suresnes. In the class for six doubles (open), Messrs. Bell & Thorpe are first with some nicely-bloomed plants, of which, perhaps, Madame Boutard is best; the others are Triomphe de Thumensnil, Madame Lemoine, Signet, and Miss Evelyn. Mr. Marsh has six well-flowered plants, but too much tied across, and the other collections contain nothing very remarkable.

VARIEGATED PELARGONIUMS.—In the class for six Variegated Pelargoniums, well-coloured plants of Tricolors are exhibited by Mr. Perry, gardener to C. J. Gould, Esq., Bamfylde Lodge, Exeter, consisting of Sophia Dumaresque, Mrs. Turner, Lady Cullum, Florence, and Countess of Craven. Mr. Lye has six much smaller plants; but these two collections do not come within the term Variegated. Messrs. Bell & Thorpe have six variegated white-edged, without name, and took the second prize. The indefinite term "variegated" has misled some exhibitors. In the class for Tricolors a few nice collections are staged, the principal varieties being Mr. Rutter, Mrs. Headly, Miss Burdett Coutts, Sir R. Napier, Peacock, Reynolda Hole, Mrs. Rousby, and Peter Grieve. Mr. Pestrige is first with Mr. Rutter, Italia Unita, Achievement, Lass o' Gowrie, Mrs. Headly, and Miss Burdett Coutts. Mr. Turner is second, and Messrs. Bell & Thorpe third. In the class for six new Zonal Pelargoniums sent out in 1872, the first prize goes to Messrs. Bell & Thorpe for Virginal, Wood Nymph, Merlin, Juliette, &c. For one new Zonal Pelargonium the first prize goes to Messrs. Bell & Thorpe for Miranda, salmon; the second to Mr. C. Turner, Slough, for Prince Arthur, scarlet. For three Bronze Pelargoniums the first prize goes to Messrs. Downie, Laird, & Laing for W. E. Gumbleton, Chieftain, and Mrs. Harrison Weir; and for single Bronze not sent out, for Shah of Persia. In three Silver Tricolors, the first prize goes to Mr. C. Turner for Miss Pond, Dolly Varden, and Lady B. Brydges; the second to Messrs. Bell & Thorpe; and for single Silver Tricolors, first prize to Mr. C. Turner for Dolly Varden. In Golden Tricolors, the first for three goes to Mr. Turner for Miss Morris, Mrs. H. Little, and Baroness Burdett Coutts; the second to Mr. Pestrige for Mrs. H. Little, Brilliant, and Marie Stuart. For one new Golden Tricolor, the first prize goes to Mr. C. Turner for Golden Queen, the second and third also to Mr. Turner.

CUT FLOWERS.

PINKS.—Several very nice stands are exhibited, the best of which is that shown by Mr. Charles Turner, consisting of beautifully laced plants of Princess of Wales, Devise, Genevieve, Rev. George Jeans, Attraction, Prince Frederick William, Mildred, Bertram, Ernest, Lord Kirkcaldy, Nina, and Godfrey. Mr. H. Hooper is second, and Mr. James Hooper third. Of the local prizes for twelve, the first is given to Mr. D. Pizzie, gardener to Sir E. Perry, Bart., Slough, for excellent blooms of Mildred, Devise, Godfrey, Rosy Gem, Genevieve, Edith, Annie Chater, Nina, Constance, Lord Kirkcaldy, Bertram, and Prince Frederick William. Mr. Catly, of Claverton Buildings, Bath, is second.

PELARGONIUMS.—Two collections of cut blooms of double Pelargoniums are exhibited, Messrs. Carter & Co. taking first, and Mr. H. F. Hall, of Bath, second. The blooms in the first are C. Glijm, M. Boutard, William Pfitzer, Marie Lemoine, Madame Bonnet, &c. There are four collections of cut blooms of twelve varieties of Zonals; the first prize going to Mr. A.

Gabriel, Vale Lodge, Bath, for Lorenzo, Beauté de Suresnes, Grand Duke, Blue Bell, Mrs. William Paul, Pioneer, Warrior, Gladiateur, Monster, Emeline Grissu, Rising Sun, and Maréchal Vaillant. Second prize to Mr. Evans, gardener to Dr. Abercrombie, Cheltenham; third to Mr. Thomas Carter, Brooklyn Lodge, Bristol.

Roses are exhibited in great perfection. We have heard a great deal of unfavourable weather, lateness of season, and such-like complaints; but no one, seeing the magnificent blooms exhibited here, would believe that any of these complaints were well founded, for grander blooms than those exhibited it would be impossible to conceive. In the class for forty-eight Mr. Cranston is first with some grand blooms, comprising amongst those least known, La Esmeralda, crimson; Marquise de Gibot, fine pink; and Julie Touvais, very large. There are also fine blooms of Marguerite Dombain, Madame Sertot, Dupuy-Jamain, Maréchal Niel, Victor Verdier, Madame Eugénie Verdier, Jean Cherpin, Princess Beatrice, fine; Mons. Noman, Centifolia rosea, Baroness Rothschild, Marquise de Mortemart, &c. Mr. George Paul is second. The best of his Roses are Victor Verdier, Madame Pillion, Madame Clert, Madame Thérèse Levet, John Hopper, Fisher Holmes, and Elizabeth Vigneron. Mr. C. Turner is third, and Mr. Durbin, of Bath, fourth. In the class for twenty-four Roses (amateurs), the Rev. J. B. M. Camm is first, and right well he deserves it; for is it not he whose complaints of bad soil have reached all our ears, and of which our friend Mr. Peach says it is the very worst that Roses could grow in? and yet he carries off well the honours of the day amongst amateurs. He has fine blooms of Sénateur Vaisse, Clotilde Rolland, Catherine Mermet, Edward Morren, Baron Rothschild, Dupuy-Jamain, Marguerite de St. Amand, Charles Lefebvre, and Madame Eugénie Verdier. Mr. Chard is third, and the Rev. G. Handley fourth, with some good blooms. I have never seen Edward Morren so well shown as Mr. Camm exhibited it. In the class for forty-eight blooms, trebles (nurserymen), Mr. Cranston is again first with some grand blooms, comprising those mentioned in the class for forty-eight. Messrs. Paul & Son are second. In the class for twelve (amateurs), the first prize is taken by Mr. John Scott, Warmminster, with fine blooms; but to my mind Mr. Camm, who is second, is really the best. Madame Rothschild is grand, so are Souvenir d'un Ami and Edward Morren. Mr. J. Smith, Warmminster, is third. Amongst other Roses there is a fine box of Cheshunt Hybrid (Tea), exhibited by Messrs. Paul & Son, of Cheshunt, very fine, fully justifying all that has been said of it. In the class for six, Mr. Camm is first with a splendid lot, notably Charles Lefebvre, Edward Morren, La France, Baroness Rothschild, Clotilde Rolland, Exposition de Brie. Mr. Smith is second, and Mr. Chard third. As, however, there is to be a special Rose Show to-day, I shall have more to say about her majesty then.

DINNER-TABLE DECORATIONS.

The competition in this section is not by any means so extensive as at Birmingham, and I am glad to see that the cutting-away of tables is abandoned by most exhibitors. Miss E. Harris, Clarendon Park, Salisbury, is first with a table on which three very tall and slender vases, with three small cornucopias half-way up, filled with very light and graceful Grasses, Bougainvillæa, &c., the base of the stems being set out with Adiantum farleyense and other Ferns, with spacious glasses containing Irises and Ferns; this table is remarkable for its simplicity. The second goes to Miss Edith Blair; in this two Palms have been let into the table, and the centre is a tall slender vase, similar to that shown by Miss Harris. The glass is very good, and the whole appointments of the table are in excellent taste. The third prize goes to Mr. Armitage; there is a vast deal of colour—in fact, it is overdone, although the greater number of visitors would admire this most. The fourth prize goes to Mr. Cypher, Cheltenham, who has a little overdone his table; his centre stands are very handsome, but the surroundings are too many.

For single stands there was a very close competition. Some very good stands were exhibited, although it is easy to find fault with them. Thus, for instance, in the first stand it was a great mistake to put the blooms of Anthuriums at the top, and to make the base so heavy; this was awarded to Mr. Spencer; the second is similar, with a bract of Bougainvillæa in the upper; the third is of the same character.

The bouquets are, as usual, some of them very good, but the greater number overcrowded. Want of space prevents my adding more, but the subject will be resumed next week.—D., Deal.

FRUIT.

The show of Fruit is a remarkably good one, and, considering the season, the quality is good. One hears on all sides the remark that fruit is not so good as usual, or that there is much difficulty experienced in getting it in time. At all events, this is the best show of fruit that we have seen this year.

COLLECTIONS.—Only one is put up for competition, and that is a poor one; it comes from Mr. D. Wilson, The Gardens,

Castle Hill, South Moulton, Devon, and contains two fair Queen Pines, two dishes of Black Hamburg Grapes, nice Royal George and Stirling Castle Peaches, Nectarines, Cherries, and Strawberries.

PINE APPLES.—There are twenty-two staged, mostly Queens, some of which weigh 5 lbs. For three Pine Apples, any variety, Mr. G. Ward, gardener to T. N. Miller, Esq., Bishop Stortford, is first with three Queens, which weighed in the aggregate 15 lbs. 6 ozs.; the fruit are even in size and well ripened; second Mr. G. T. Miles; third Mr. T. Selwood, Eaton Hall, Chester. In single fruit of any variety, Mr. G. Ward is first with a handsome Queen, Mr. G. T. Miles second; and Mr. T. Selwood, Eaton Hall, Chester, is third with the same variety. A very handsome Providence, which must weigh a dozen pounds, comes from Mr. H. Bertram, gardener to R. T. Crawshaw, Esq., Cyfartha Castle, Merthyr Tydvil.

GRAPES.—Of Black Grapes, single dishes, all the exhibits are Black Hamburg, and of these there are some good dishes. The first prize goes to Mr. W. Coleman, gardener to Earl Somers, Eastnor Castle, Leicestershire, for large well-ripened bunches, the berries of fair size, and well coloured; second, Mr. A. Johnson, gardener to the Marquis of Ailesbury, Savernake Forest, Marlborough; the third prize going to Mr. W. B. Upjohn, gardener to the Earl of Ellesmere, Worsley Hall, Manchester. Class 60, White Grapes. Here Mr. J. Smith, gardener to W. Blinkhorn, Esq., Waterdale, Sutton, is first with exceedingly well-ripened Muscats, the bunches large, and berries of fair size. Second comes Mr. A. Johnson with excellent Buckland Sweetwater, Mr. G. Sage, gardener to Earl Brownlow, Ashridge Park, Great Berkhamstead, is third with Muscat of Alexandria. Some very good Bowood Muscat is exhibited in this class, but quite unripe. Some excellent baskets of Black Hamburg are exhibited, but nothing can beat the basket of Muscat of Alexandria sent by Mr. J. Smith. The second prize was awarded to Mr. W. H. Bannister, gardener to G. H. Ames, Esq., Cole House, Westbury-on-Trym, Bristol, with good Black Hamburg. Mr. A. Johnson is third, also with Black Hamburg.

Local Special Prizes for Fruit (Vines in pots, amateurs), Mr. D. Wicks, gardener to the Rev. C. Kemble, Vellore, Bath, has a second prize for three pots of Royal Ascot, and a third prize is awarded to Mr. H. Dutton, gardener to Broadley, Esq., Barrow Castle, for small plants of Black Hamburg.

For Grapes, three dishes distinct (open class), Mr. J. Douglas is first with Black Hamburg, the berries intensely black and well finished, Muscat of Alexandria, and good Buckland Sweetwater. A third prize is awarded to Mr. T. King, gardener to Valentine Leach, Esq., Devizes Castle, Wilts.

The Veitch Memorial prize for the most meritorious dish of Black Grapes, was awarded to Mr. Coleman, gardener to Earl Somers, Eastnor Castle. That for the most meritorious dish of White Muscat Grapes was awarded to Mr. J. Smith, gardener to Wm. Blinkhorn, Esq., Waterdale, St. Helens; and that for the most meritorious dish of Grapes, not Muscats, was awarded to Mr. Arthur Johnson, gardener to the Marquis of Ailesbury, Savernake Forest, Marlborough.

PEACHES AND NECTARINES.—The first are very good, the fruit well ripened, and of large size; except in the prize dishes the latter are not so good in quality, and wanting in colour. The first-prize Peaches are a very fine dish of Royal George from Mr. Burnett, gardener to Mrs. Hope, The Deepdene, Dorking, Surrey. Mr. G. T. Miles, gardener to Lord Carington, Wycombe Abbey, High Wycombe, is second with excellent Violette Hâtive. Mr. W. Scammell, gardener to the Marquis of Lansdowne, Bowood, Wilts, is third with Bellegarde. The best Nectarines are from Mr. Jack, gardener to the Duke of Cleveland, Battle Abbey, Sussex, a nice dish of Elruge. Second, Mr. W. Coleman with the same variety. Mr. A. Grant, gardener to J. B. Glegg, Esq., Whittington Hall, Chelford, is third. In all twenty-seven dishes are staged.

FIGS.—The best is a dish of Brown Turkey from Mr. W. Coleman; Mr. G. Sage is second, and Mr. J. Beck, Wimborne, Dorset, is third.

CHERRIES.—Here Mr. G. T. Miles is, as usual, first with an intensely black dish of Black Tartarian. Mr. J. Beck, Wimborne, Dorset, is second with well-ripened Elton. The third prize goes to Mr. D. Wilson, The Gardens, Castle Hill, South Moulton, Devon.

STRAWBERRIES.—Class 65, six dishes, distinct kinds. These are of fair average quality. The first-prize dishes come from Mr. J. Holden, gardener, Restbury, near Cheltenham; he has good dishes of British Queen, President, Alice Maud, &c. Mr. W. Fisher, gardener to Mrs. Col. Bailey, 6, Stamburgh Place, Bath-easton, is second; Mr. G. Lee, Clevedon, Somerset, third. Single dishes.—The first prize is for an excellent dish of Sir C. Napier from Mr. J. Brickell, gardener to J. Orred, Esq., Ashwick Hall, Marshfield, Chippenham. The second is awarded to Mr. W. Coleman for a nice dish of British Queen. Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford, is third with La Constante.

MELONS.—In the two classes thirty fruits are staged. The

first prize in Green-fleshed is awarded to Mr. W. Coleman, for Victory of Bath. Mr. R. Gilbert, gardener to the Marquis of Exeter, Burghley House, Stamford, is second, also with Victory of Bath. The third prize goes to Mr. A. Morse, gardener to W. G. Baker, Esq., Bromwell House, Brislington, Bristol, for Gem of the West. In Scarlet-fleshed, Mr. O. Goldsmith, gardener to Sir W. Farquhar, Polesden, Dorking, Surrey, is first; Mr. J. Read, Arley Hall Gardens, Northwich, Cheshire, is second, both exhibitors showing Scarlet Gem. Mr. W. Coleman is third with Mounsdens's Moreton Hall.

MISCELLANEOUS.—For fruits not mentioned in the schedule, equal first prizes are awarded to Mr. J. Brickell, Ashwick Hall, Marshfield, Chippenham; and Mr. A. Morse, gardener to W. P. Baker, Esq., Bromwell House, Brislington, Bristol. The former has two nice dishes of Apples, and the latter a dish of Capiscums, an exact miniature counterpart of the old Scotch blue bonnet.

VEGETABLES.

Of these there is an immense display; the whole extent of tabling extending to 100 yards, being well filled with most meritorious productions. Cucumbers, Peas, Potatoes, Tomatoes, and Cauliflowers are very fine.

COLLECTIONS.—For these, limited to noblemen's and gentlemen's gardeners in Somersetshire, Gloucestershire, and Wiltshire, and limited also to certain sorts—an amount of limitation which caused only three collections to be put up; and one of them, a very good one, was disqualified because it did not contain a couple of Vegetable Marrows—the first prize was awarded to Mr. Carrell, gardener to A. J. Skinner, Esq.; it contains a handsome brace of Dreadnought Cucumber, excellent Cauliflower, William I. and Laxton's Supreme Peas, Alma and Ashleaf Kidney Potatoes, and other good things. The second goes to Mr. J. W. Chard, Clarendon Park, Salisbury, Wilts. In Class 178, collection of fifteen dishes, to include not more than four dishes of Potatoes, different varieties, twelve of each—here the competition was very close, and no less than eleven competitors contested for the prizes. The first was deservedly awarded to Mr. James Holder, gardener, Restbury, Cheltenham. It contains a dozen fine specimens of Dreadnought Cucumber, the same number of fine Cauliflowers, Harrison's Glory Pea, Short Horn Carrots, Giant Asparagus, Nonpareil Cabbage, Dutch Turnips, Tomatoes, Red Celery, very fine Onions, and Alma Kidney Potatoes, a very fine dish of Mushrooms, Globe Artichokes, and Dwarf Kidney Beans. The second is also a good collection and contains a very similar assortment. The Peas are Mutton-in-parvo. It comes from Mr. J. Turk, Railway Cottage, Tewkesbury Road, Cheltenham. Mr. G. T. Miles is third; he has Laxton's Superlative Pea, large in pod but not well filled, an excellent bundle of Asparagus, &c. Some of the other collections are well worthy of notice, but want of space prevents. In Class 179, half peck of Peas, there are fifteen good dishes staged. Mr. J. Turk has the first prize for William I. Mr. W. Cross, gardener to J. B. Lousada, Esq., Sidmouth, Devon, is second with Alpha, and Mr. G. Brown, Pawley Court, Henley-on-Thames, is third with Supreme.

ASPARAGUS, hundred heads.—Mr. G. T. Hasell, Barlow Hill, Bristol, is first with an excellent sample. Mr. G. T. Miles is second; and Mr. T. Bray, gardener to W. A. Sanford, Esq., Nynehead Court, Wellington, Somerset, is third. The next class is for the new Conover's Colossal Asparagus. Mr. G. T. Hasell is again first with an excellent bundle; it may be different from the old sort, but neither in this nor in the other exhibits is the difference apparent. Mr. E. Smith, Bentham Gardens, Alston, Cheltenham, is second, and Mr. Bray third.

POTATOES, dish of twelve Kidney.—Mr. G. Burridge, gardener to T. Butler, Esq., Combe Hay Park, Bath, is first with very fine specimens of Mona's Pride. Mr. W. Willis, 5, Windsor Terrace, Bathwick Hall, is second with Myatt's Ashleaf; Mr. E. Rooker, gardener to Major J. Grettton, Cotton Hall, Sudbury, Derby, third. Mr. J. Mattock, Headington, Oxford, is first for three dishes; Mr. Rooker second; and Mr. J. Garland, Killerton, third. Mr. Rooker also exhibits the best round Potatoes.

ONIONS, twelve.—Mr. G. T. Miles has very fine White Naples, and has the first prize awarded for them; Mr. Carrell is second, and Mr. E. Smith third.

TOMATOES, dish of twelve.—Mr. W. Cox, gardener to Earl Beauchamp, Madresfield Court, Great Malvern, is first with excellent fruit of the Large Red; Mr. W. Coleman is second; and Mr. Douglas third; both of them show the Orangefield Dwarf Prolific.

LETTUCE, collection of twelve sorts.—The prizetakers are Mr. P. Turk and Mr. E. Smith.

CUCUMBERS.—There are twenty-two brace of these. Mr. J. Holder is first with Dreadnought and Little Gem, varieties similar to each other, both white-spined. Mr. J. Douglas is second with a nice brace of Blue Gown and a brace of a very fine smooth variety. Mr. E. Smith is third with Harrison's White Spine, and another brace of the same sort, misnamed Blue Gown. The fourth prize went to Mr. T. Hobbs, Lower Easton, Bristol.

In this class the judging was bad. The schedule says "distinct sorts," and in the first and third prizes the difference was not apparent, and the fourth prize was wrongly awarded. Mr. D. Pizzev, gardener to Sir E. Perry, Fulmer, Slough, certainly ought to have had a prize.

COLLECTIONS OF SWEET AND POT HERBS.—This is a very nice exhibition. Mr. W. Cross has a collection in a box very neatly set up—it contains over fifty sorts. Mr. G. Cooling, nurseryman, Bath, is second.

MISCELLANEOUS.—Messrs. Carter again offered prizes for a collection of twenty-four dishes of vegetables, amongst them certain sorts sent out by them. The first prize, a challenge cup value fifty guineas, and a first prize of £6, goes to Mr. W. Cox. He has a fine brace of Little Heath Melon; Marquis of Lorne and Telegraph Cucumbers; Laxton's Alpha, G. F. Wilson, Carter's White Gem, Hundredfold, and Supreme Peas, &c. Mr. D. Lumsden, Bloxholm Hall, Sleaford, is second; there are three more collections, to one of which, unnamed, a third prize is awarded. For fifty podes each of any three varieties of Mr. Laxton's new Peas sent out by Messrs. Hurst, the prizes awarded by them: Mr. R. Gilbert, gardener to the Marquis of Exeter, is first with Superlative, William I., and Popular; second, Mr. Pragnell, gardener, Sherborne Castle, Dorset; Messrs. Cross, Garland, and Brown are the remaining prizetakers.

COTTAGERS' PRIZES.

The flowers, fruits, and vegetables in this section are highly meritorious. The best window plant is a beautiful pink-flowered Ivy-leaf Geranium, from Mr. F. Ford, Primrose Hill, Weston. Cut flowers are very fine. Mr. J. Knight, Pulteney Road, Bath, has the first prize; but the arrangement of Mr. Ford's box is the best. Roses, baskets of vegetables, Cauliflowers, Potatoes, and Peas; and amongst fruits, Strawberries are very fine. We are sorry we cannot give a list of all the awards, as they all deserve notice.

PROPAGATION OF LAPAGERIA ROSEA, &c., AT CHATSWORTH.

When on a visit for a few days to Mr. Speed, at Chatsworth, in February last, I was much struck with many things well out of the "old rut." In a Camellia house, where a path leads along the back wall, a narrow bed of Lapageria was growing in strong loam. The shoots were growing as freely almost as a Passiflora; many of these were pegged down or covered with some of the loam, and sending out shoots white and strong as quills. Mr. Speed pulled up a handful of these rooted layers with no more concern than as if they were so many weeds. Loam is not generally used for growing Lapageria, but here nothing could be more satisfactory. Loam, "pure and simple," seems to be the favourite soil with Mr. Speed for many things which are generally grown in lighter stuff.

In this same house Camellias are grown entirely in loam, and right well they thrive in it; probably no finer plants are to be found in Britain. We some time ago read of Camellias being so fine that they would "hide a bullock" in their centres! I would hardly venture to say that these Chatsworth bushes would hide such large quadrupeds, but I maintain they would give shelter to a small flock of sheep. The leaves were as large as Laurel leaves, and the plants were loaded with flowers, open and in bud. In a corridor I took note of *Reticulata alba plena* with over a thousand blooms coming out; this was a trained plant. The Oranges which we saw a few years ago in a sad plight are now fine healthy specimens.—M. TEMPLE (in *The Gardener*.)

ROYAL JERSEY AGRICULTURAL AND HORTICULTURAL SOCIETY'S SHOW.

HORTICULTURAL DEPARTMENT.
(From a Correspondent.)

The annual Show of Roses, plants, fruit, and vegetables was held in the beautiful grounds of the Imperial Hotel, on Wednesday, June 11th. The plants were exhibited in a large tent erected on the lawn in front of the Hotel.

Show Pelargoniums were not first-rate. The Fancy class was better represented; the first prize was awarded to Mr. C. P. Le Cornu; second prize, Capt. Jackson, R.N. The last-named gentleman was also first in the class for six double Pelargoniums with immense-sized plants. Mr. P. F. Le Sueur was first for six Tricolor Pelargoniums with good plants in first-rate colour of Miss Pond, Mrs. Headly, Mrs. Turner, Achievement, Peter Grieve, and Lass o' Gowrie. The same exhibitor also was first in the class for three. Greenhouse plants were very indifferently shown, with the exception of the class for one specimen, the first prize being taken by Mr. C. P. Charleton with an admirably-flowered Azalea. Messrs. Markland and Le Sueur divided

the honours in the class for one specimen hothouse plant, the first-named with a specimen of *Clerodendron Balfourii*, the second with *Anthurium Scherzerianum*. Mr. Le Sueur was also first for six fine-foliage plants with small specimens of *Draena regina*, *ferrea*, and *Guilfoylei*, *Crotons maximum* and *variegatum*, and *Cissua discolor*. The second prize was awarded to Mr. J. Deslandes. In the class for three Mr. J. Brayn, jun., outdistanced the other competitors with magnificent plants of *Pandanus utilis*, *Ficus elastica*, and *Maranta zebra*. The same exhibitor was first in the class for one specimen with a large plant of *Cissua discolor*, trained on a pyramidal wire trellis. Prizes were offered for six flowering Begonias, also for three fine-foliage Begonias. Major-General Knatchbull was the only exhibitor in the first-named class, but was awarded a second prize only, the plants being evidently past their best. The prizetakers in the last-named class were Messrs. J. Brayn, jun., J. Deslandes, and Le Sueur in the order in which the names are placed. Ferns were well shown by Mr. Cutlan, of the Channel Islands' Fernery, who was first for twelve, Mr. Mac-kellar being first for six. Lieut.-Col. Le Gros was first for eight Fuchsias, and Major-General Knatchbull second. The same exhibitors competed in the class for one specimen. These were all beautifully grown and flowered; if they had a fault it was that of excessive tallness. Stands of stove and greenhouse plants, also of greenhouse plants only, were arranged down the centre of the tent, and contributed largely to the beauty of the Show. The prizetakers were Major-General Knatchbull, Mr. J. Deslandes, Mr. F. Bertram, and Mr. Hellen. Gloxinias were admirably shown by Mr. J. Deslandes and the Misses Ainge. Major-General Knatchbull also exhibited a small specimen of Tricolor-leaved Fuchsia Sunray. The leaves are blended with crimson, white, and green; the plant is of good habit, and no doubt will be useful as a decorative plant. Cut Roses were a special feature, but, undoubtedly, the Show was held a fortnight too early, in consequence of which there were very few first-class Roses in the different stands. Mr. De Faye was the only exhibitor of forty-eight, and was awarded the first prize. There was a good competition in the class for twenty-four; Messrs. Souzel, Le Sueur, and Major-General Knatchbull were the prizetakers. All the other classes for Roses were well filled, and in many cases the competition was most keen. Table bouquets were good, but the hand bouquets were scarcely up to the mark, being in most cases too large.

Fruit was not plentiful. The first prize for Black Hamburgh Grapes was awarded to Mr. E. Neel, jun., for three very fine bunches. Strawberries were first-rate. First, Mr. Taylor; second, Mr. C. W. Robin; third, Mr. Drieu. An extra prize was awarded to Mr. J. Brayn, jun., for a dish of splendid Peaches and two dishes of Nectarines; the same gentleman was also highly commended for one Melon.

Vegetables were shown in quantity, and were of excellent quality. The prizes offered for baskets of eight sorts were well contested; the first prize was awarded to Mr. F. Bertram, and the second to Mr. G. Bashford. For baskets of four sorts Mr. G. De Faye was first, and Mr. F. Bertram second. Potatoes were good. The first prize for four different varieties was awarded to Lieut.-Col. Le Gros, who had some large, clean, and handsome tubers; the Misses Ainge and Mr. J. Deslandes were second and third. For single dishes of Kidney varieties Mr. D. De Faye first, and Sir John Le Couteur second; and for Round varieties Mr. J. Deslandes, and Lieut.-Col. Le Gros were the prizetakers. Mr. De Faye staged some enormous stalks of Rhubarb, for which he was awarded a first prize. The various arrangements were tastefully carried out by the Committee, and unremitting was the courtesy of Major Howell, the Secretary.

THE POTATO DISEASE.

On digging-up our early Potatoes in the orchard-house borders about the middle of April we were surprised to find one-tenth diseased, a matter which had never previously occurred. The haulm was perfectly healthy, and the tubers fine, planted in two separate houses. It is difficult to assign a cause for this, as Potatoes under such conditions are apparently removed from electrical disturbances, from abrupt atmospheric changes, from currents laden with poisonous germs, and from excessive moisture; some of which, especially if in combination, are held by observers as predisposing causes to disease.

At first it seemed probable that the disease might be latent in the seed itself, which, however, came from a good house, and had been one season planted here with very little, if any, disease; but I finally remembered that a new garden walk of some extent having been made, some of the soil was added to the two orchard-house borders, and this soil had previously borne crops of Potatoes: therefore, I am led to think that the thorough extirpation of every vestige of a diseased tuber is of importance at the time of digging-up, and that this is not

sufficiently attended to; otherwise the germs of the disease may be supposed to be latent in the tuber, and, if so, might not be deeper than the skin or eye, for which some remedy,

such as more thorough greening or washing in some solution, might be effective; but in the present case the soil seems to have held the cause of evil.—T. C. BRÉHAUT.

CORYNOSTYLIS HYBANTHUS ALBIFLORA.

THE plants of the genus *Corynostylis* are stove shrubs of the Violet family, of climbing habit, and natives of Tropical America. *C. Hybanthus* was introduced by Mr. Linden from Para, through Mr. Wallis, and was figured by Dr. Hooker in

the "Botanical Magazine," t., 5960, where it is remarked: "Though belonging to the same natural order as the Violet, and closely connected with that genus, its habit and the form of its flower more resemble those of the racemose Indian



Corynostylis Hybanthus albiflora.

Balsams. The curious twist of the spur has been observed by Martins alone in his careful description of this plant. It is a most variable species, and I believe that all the so-called species the genus contains, and which are hitherto described, are referable to one, which extends from the Amazon (which it ascends to the junction of the Rio Negro), to Venezuela, Columbia, Guatemala, and St. Vincent; but which, curiously enough, has not been detected in Trinidad."

C. Hybanthus exhibits many forms differing considerably from each other in leaf and flower; that which we have now the opportunity of presenting to our readers through the

courtesy of Mr. Eull, of Chelsea, with whom it flowered last year is the *C. albiflora* of Mr. Moore, who describes it as being of half-climbing habit, and having ovate elliptic leaves of moderate size, with white flowers of curious form, dangling gracefully on long thread-like stalks. The flowers, which are borne on long slender stalks, are freely produced, about 2 inches long, furnished with a large horn-like spur, white, and sweet-scented. Dr. Hooker considers it to be not specifically distinct from the plant which he figured, and it must therefore be classed as a mere variety.

THE ROYAL VINEYARD GRAPE—FERTILISING THE BLOSSOMS OF VINES.

It is now some years since this Grape was sent out from that nursery from which it takes its name; it was then spoken of as a first-class late white Grape, but somehow lately we neither hear nor see much of it, yet it is a really good white Grape in all respects. It is of a vigorous constitution, and a more prolific bearer cannot be. It may well be designated a perpetual bearer, for it usually produces two and three bunches on a shoot

at first, and then continually produces throughout the season bunches on the laterals. Finer bunches or better-flavoured berries are not needed. But does it set freely? will be the question. Well, I say most decidedly under certain conditions. Plenty of heat, an extraordinarily dry burning atmosphere, drawing the hand down over the bunches, shaking the Vine, using camel's-hair brush, &c.—all of these performances have

been gone through, yet no Grapes, or but few, have been the result. The Vine is here growing in an outside border in a clayey soil that would make good bricks. The bed when first made was just put down level with the surface, but I brought it up above it; this improved matters considerably. The Royal Vineyard is growing in a house with Lady Downe's, Buckland Sweetwater, Black Hamburg, and Muscadine, the house being kept full of plants which require to be abundantly supplied with water, nevertheless the Royal Vineyard has set well for the last two or three years under the most simple agent; and here it is—the tail of a rabbit. Nothing can equal that for aiding the setting of Grapes.

My practice is to have the plants watered the first thing in the morning, and as the temperature rises to admit plenty of air. By two o'clock all will be ready for operation; the Vineyard Grape being late in flowering, all but Lady Downe's are out of bloom. The rabbit's tail is gently passed over the surface of those bunches that are in the best condition. Immediately pass it or gently tap it on all parts of the bunches of the Vineyard Vine, and so continue day after day as long as these little crystal-like spots appear on the bunches; you will then have them set to your liking. Lady Downe's is not one of the best of Grapes to set in a cold house, but by taking its pollen to fertilise others it also assists itself. I believe it is seldom that the pollen of the Royal Vineyard under cold treatment—perhaps in heat too—comes to perfection; it therefore needs to be fertilised with that of other varieties, and then a better Grape never grew.—J. T., *Maesgwynne, South Wales.*

P.S.—Keep two or three rabbits' tails on hand, for if one becomes wet it is of no further use, as the pollen adheres to it. It can of course be dried again, and will then be as good as ever.—J. T.

GLADIOLUS CULTURE—RESTRICTIONS IMPOSED BY SHOW COMMITTEES.

We are generally agreed as to the reasonableness of the custom of praising the bridge that carries us safe towards the end of our journey. Now, in the growing Gladioli, all perhaps more or less have had difficulties, or what I may be allowed to term "streams," to contend with. Some may have had soil both poor and naturally of a cankerous nature to contend with; whilst others, like myself, have had it of the more virgin type, and just waiting the hand of the industrious cultivator to mould and improve it into the containing any quantity of good properties that the most fastidious could wish. As regards the presence of wireworm, no question but the old pasture newly cultivated, without artificial means being used for their destruction, is one of their most favourite resorts.

Your correspondent's lot—and with which he is quite satisfied—has been to spend his leisure hours in a plot of ground that five years ago formed a portion of an old pasture field, in nature friable, with sand bottom, rather inclined to the sun; its more unfavourable characteristics being lack of protection, and more than usually subject to white frosts when we have a north-east wind, or off the river Wear. With my present garden five years ago I commenced to grow the Gladioli, and, with a gradual improvement, may be said to have been moderately successful. My first bed of some sixty bulbs was my especial care; yet, notwithstanding, they were unmistakably turning to a disheartening yellow, when one day a nursery traveller gave a look-in, and advised me to give my pets a dose of nitrate of soda. A week or ten days later a marked improvement was discernible by the most casual observer, and I at once drew attention to the remedy in this Journal. Since then I have tried other improvements, but my faith is still strong in this original prescription, to which I attribute my freedom from attack by that garden pest, the almost-indestructible wireworm.

I am an especial admirer of this grand autumn flower—in fact, I believe it to be one of the finest grown, and my object has always been to give encouragement to others, in order that they may experience the same pleasures as I have done.

Taking it for granted that I am the person alluded to by "D." of Deal, I have only to say that I recommended your readers to use new soil, but at the same time I beg to remind them that I apprise them of a "bridge" in the shape of nitrate of soda, by which they would be able to tide over a portion of their difficulties. I still believe, if you place a Gladioli and this pest together in a pot, that the latter will make its exit first, and that in an open bed its instinct will teach it to keep at a respectable distance. As to prospects of the approaching

tristing time, considering that I plant early in the open ground, and the rather serious frosts that we have had here in the north, on the whole I am satisfied. Some look extremely well, whilst a minor portion—perhaps fifteen per cent.—look sickly; and in taking some of the latter up I find that the roots are decayed at the ends, with a yellow tinge in various parts between the end and the bulb; and in a bed where I had put a few small bulbs and had neglected them, I found two wireworms, which had eaten through the heart of the spike. I at once gave each, good and had, a good dose of nitrate, and will closely watch the result. Contrary to former experience, this year the bulbs of my own saving have spikes quite equal to a fine lot of French ones. This latter fact is very satisfactory, as the most disheartening thing to contend with in the Gladioli is its liability to degeneration, though it would be more correct to describe it quantity rather than in quality. I should like to make this Journal a medium of the bringing the test of this all-important criterion.

In my own village we cannot boast of a floral renaissance, but at a short distance, and well adapted for railway communication, we have the show of a portion of the East Durham workmen, held under the shadow of that fine old ancient baronial pile, Lumley Castle, on the 17th of August—a suitable time for south-country growers; and on the 29th of the same month we have the exhibition at the Crystal Palace, and also on the 3rd of September is the International at Manchester. Now the proposition I wish to make is this: If there be an amateur in England who will give satisfaction as to his exhibiting his own produce, who will meet with twelve or eighteen spikes at the former place, I will return him the compliment and meet him at either of the latter places, and then we with more authority shall be able to talk over the pros and cons of the cultivation ancient old versus new soil; and, moreover, I shall bind myself at such competition to have one-half or more of my stand composed of Mr. Banks's seedlings.

Now as regards rules to be complied with. My own conviction is that rules once made ought to be abided by. Making rules "for a check" is all nonsense. They simply check the conscientious. At Alnwick we have a piece of absurdity in the shape of dimensions of stands, even to the thickness of the deal they are made of, and the distance of every hole. Of course no one notices such things. At Bishop Auckland last year, in the open Gladioli competition, after being placed next to the Rev. Lord Hawke, and Mr. Thompson, nurseryman, of Newcastle, third, the latter detected some sprigs of Asparagus stuck into the tube, and straightway he appealed—I understand to Mr. Downie, of Edinburgh, and who, without taking the trouble to read the same rule right through, whereby he would have found that none of the first three were set up according to conditions, he at once disqualified my stand and awarded 7s. 6d., consolation, well knowing that every stand there had cost as many pounds. Of course, I objected to the others, and the farce ended with all getting the place first awarded. This year I see our pets are condemned to stand "in a box;" and, moreover, to stand amid moss, "whether you can get it or no," and, as I understand, what is to be taken advantage of, "amateurs are disqualified from showing in this class." Now, I do think that the man who buys and grows Gladioli ought to have some latitude for taste in the setting of them up; and I do further think it a pity that a committee which has shown such commendable spirit as has the latter, should have made such a mistake as to have dirtied the rules with such contemptible conditions. I see at Manchester there is no restriction, and each rule is reasonable and easy to be understood; and when that body will frame a rule for universal application, they will confer a boon to many, and frustrate the whims of habitual grumblers, and likewise give peace of mind to those who at present at best are but perplexed exhibitors.—JOSEPH WITHERSPOON, *Chester-le-Street, Durham.*

MARÉCHAL NIEL ROSE.

A FINE standard plant of this magnificent Rose is at present in bloom in Aldersey Hall Gardens, Cheshire. It was planted in the kitchen garden three years ago, being trained as a climber. I took the trouble to measure it, and found its circumference 15 feet, and diameter 5 feet. At the time of writing this it has more than one hundred blooms on it. It is one of the finest specimen plants I ever saw, and to a lover of Roses a sight worth going a long way to see. Mr. Herd, the gardener, states that some scores of blooms had been cut from it in May, which shows that with good culture Maréchal Niel can at times

rival the never-failing Gloire de Dijon in earliness of bloom and profusion of flowers. Let those who have been unsuccessful in its culture try again. Most people think that without a south wall or glass houses to grow it the hopes of ever seeing this Rose in flower would only be doomed to disappointment. I am quite sure there are as many successful cultivators of this beautiful Rose as there are unsuccessful ones, and if a few of them would state their experience in growing it, it would be the means of adding fresh recruits to the Rose-loving army of Maréchal Niel.—T. J. HARRISON, Farndon, Cheshire.

PLANTS IN SLEEPING-ROOMS.

A GREAT deal of nonsense originates with people who think but do not observe. They take hold of what is really true, and imagine a great deal more, by means of which they build up a tolerable "bugaboo," at which people who trust to the learning of the builders get very much frightened. Thus it is known that plants give off carbonic acid gas at night, and straightway arises a commotion as to the danger of having them in sleeping-rooms at that time.

The quantity which they give out is so small that it does not compare in a slight degree with what human beings give out. We venture to say that a sleeping infant would exhale more carbonic acid in one night than a hundred pot plants; yet who ever suggested that the health of a mother was seriously affected by the baby resting in her arms? As to the injury from vegetation, those of us who have had to sleep at various times in woods, with but green branches for a pillow, and the sweet wild green grass instead of a feathered bed, know well after a few days of such experience, that it is the most health-giving of all luxuries, notwithstanding the "awful" amount of carbonic acid so much vegetation must give out every night. Surely if this is so injurious it ought to affect the lungs more especially than any other part of the system, yet the experience of army life is abundant that many a person who, with lung disease, supposed he might as well "die for his country" in the woods and fields as "on a feather bed," and went into the war of the rebellion, was, if not wholly cured, much ameliorated by thus sleeping out amidst the carbonic acid of open-air vegetation.

Still facts and figures please most people. Governor Holt addressed a letter to Prof. Kedzie, of the Michigan Agricultural College, recently, on the subject. The Professor replied at length. We make the following extract:—

"Not to leave this matter in the condition of mere conjecture, I have gathered and analysed specimens of air from a room where the influence of growing plants would be exhibited in a greatly exaggerated form. Thus, instead of taking the air from a room containing a few plants, I gathered it from the College greenhouse, where more than six thousand plants are growing. I gathered the air before sunrise on the mornings of April 16th and 17th; the room had been closed for more than twelve hours, and if the plants exhaled carbonic acid to an injurious extent, the analysis of air from such a room would certainly disclose this fact. The three specimens of air gathered on the morning of April 16th, from different parts of the room, gave 4.11, 4.00 parts of carbonic acid in ten thousand of air, or an average of 4.03 in ten thousand. The two specimens of air gathered April 17th gave 3.80 and 3.80 parts of carbonic acid in ten thousand, or an average on the whole of 3.94 parts of carbonic acid in ten thousand of air; while the out-door air contains four parts in ten thousand. It will thus be seen that the air in the greenhouse was better than 'pure country air.' This deficiency of carbonic acid was doubtless due to the absorption of carbonic acid and consequent accumulation of oxygen during daylight, since the windows of the greenhouse were closed day and night on account of the cool weather.

"To ascertain whether the air of the greenhouse had more carbonic acid by night than by day, I gathered two specimens of air in different parts of the house, at two o'clock p.m., April 17th. These gave 1.40 and 1.38 parts of carbonic acid in ten thousand, or an average of 1.39 parts, showing that the night air contained more carbonic acid than did the air of day.

"Now, if a room in which were more than six thousand plants, while containing more carbonic acid by night than by day, contains less carbonic acid than any sleeping-room on this continent, we may safely conclude that one or two dozen plants in a room will not exhale enough carbonic acid by night to injure the sleepers.

"It is so easy to be deceived by a name! I lately saw an

article showing the beneficial and curative influence of flowers in the sick room. Instances were related where persons were cured by the sight and smell of flowers, and without question their influence is good. Yet flowers exhale this same carbonic acid both by day and by night! The flowers, by their agreeable odour and delicate perfume, impart an air of cheerfulness to the sick chamber which will assist in the recovery from lingering disease, notwithstanding the small amount of carbonic acid which they constantly exhale.—R. C. KEDZIE."—(*American Gardener's Monthly*.)

A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 11.

TRICHOPILIA.

A GENUS comprising but few species. All of them are dwarf in habit, the majority producing gaily-coloured flowers. The pseudo-bulbs are compressed, and bear a single leaf on the top. Peat and sphagnum in about equal parts form the soil they thrive best in.

T. SEAVIS.—This is the only species which I shall include in this enumeration, but it is a truly beautiful one. There are many varieties of this plant, and therefore the amateur should endeavour to secure a good one. The pseudo-bulbs are somewhat ovate, bearing a large solitary leaf; the flowers (see page 502), are large, produced in great abundance, and deliciously sweet; the sepals and petals white; the lip white, spotted and blotched with crimson, and stained at the base with bright orange. Native of Costa Rica.

SOPHRONITIS.

The plants comprised in this genus are all small and beautifully coloured. They are best grown upon a block of wood or in small baskets; in the latter case it should be half filled with pieces of charcoal and covered with sphagnum moss.

S. GRANDIFLORA.—This little gem should be grown in quantities by everyone; the whole plant does not exceed 3 inches in height. The flowers are large, thick and fleshy in substance, and rich crimson-scarlet in colour. Blooming as it does in November and December, it produces a cheerful effect within-doors when all without-doors is dull and dreary. Native of the Organ Mountains.—EXPERTO CREDE.

LETTERS FROM JAPAN.—No. 3.

Tokio, November, 14th, 1872.

ACCORDING to promise I will continue my description of Su-mae-Yah. On entering the gateway of one of the gardens you generally come on a pretty little winding path leading up to the gardener's house, which is usually situated near the centre of the garden. On both sides of the walk specimens of the hardy ornamental trees of the country are planted, many of which are dwarfed or clipped into round table forms. The Yew (*Taxus cuspidata*) is one of the principal; but there are different species of *Thuja*, *Retinosporas*, and *Pines* duly represented. Plants cultivated in pots are usually placed near the gardener's house, or put under a shed of bamboo work. He protects his tender plants in rooms, which are fitted with shelves, in the winter months. Glass houses have not yet been built. Among these plants you will find the *Cacti*, *Aloes*, *Fuchsias*, &c.

Dwarf plants are greatly esteemed by the Japanese, and they are wonderfully clever in making miniature gardens. I have seen a porcelain flower pot, 7 inches square by 3 inches in length, in which were actually growing two *Fir* trees, a fruit tree, and a *Bamboo*. The trees and plants generally chosen for dwarfing are *Bamboos*, *Plums*, *Cherries*, *Pines*, *Junipers*, and *Thuja*s.

I will endeavour to give your readers a description of the art of dwarfing trees, which I have learnt. It is one I always had a great interest in when in England; and finding the Japanese plan quite different from our English one, it will no doubt concern your readers. In the East the art of dwarfing trees is based upon one of the commonest principles of vegetable physiology. Their practice is perfectly correct, and would astonish some of our cleverest horticulturists. If they can, by the means they adopt, check or retard the flow of the sap in the trees, they prove that the formation of wood and leaves is likewise retarded. This they do by confining the roots in a small pot, withholding water, and training the branches into any design they wish. They generally bend the main stem into a zigzag form, which checks the flow of the sap, and forces

the side branches out of the stem, where they are most required. The pots in which they are planted are narrow and shallow, holding a very small quantity of soil, and only sufficient water is given to keep the plant alive. When the new branches shoot they are tied down in various ways, and twisted into any design the gardener wishes. All the strong ones are cut off, and every means is adopted to discourage any young shoots possessing any degree of vigour. Nature, as a consequence, struggles against this mode of treatment for a time, until she quietly yields to the power of the gardener. Care is taken to prevent the roots getting through the pot into the ground, and also the supply of too much moisture, as, if it received moisture, the plant would recover its original vigour, and the endeavour of the gardener be frustrated. Plum trees generally flower quickly by this treatment. I have in my drawing-room two specimens of Orange trees, with at least forty Oranges on, although neither of them are above 2 feet high.—J. TASKER FOSTER.—(By favour of the Writer's father, Editor of the Yorkshire Gazette.)

EFFECT OF STRANGE POLLEN ON THE FRUIT.

At a meeting of the Academy of Natural Sciences of Philadelphia, Mr. Thomas Meehan said he had the pleasure of offering to the Academy some facts in regard to the fertilisation of flowers, which confirmed the popular view that pollen of one variety had an immediate influence on the structure of the fruit of another variety as well as on the progeny, and also, he thought, furnishing some entirely new facts in regard to the ability of a seed-germ to receive impregnation from two distinct sources. He had presented to the Academy last year fruit gathered from a Pear tree, which, the members would remember, had the regular seeds and carpels of a Pear, but the flesh was fibrous and not granular as in the Pear, and the external membrane or rind was that of an Apple. An Apple tree had its branches interwoven with that of the Pear, and it had been assumed that the pollen of the Apple had so influenced the fruit of the Pear as to produce an immediate effect in the way presented.

But it had been urged in some quarters that this assumption was open to objection. It was now fully proved that changes of form occurred through what is now known as bud-variations, and independent of any seminal action; and it was contended this might have been the case in the Pear-Apple referred to. That there are these changes is well known. The Peach is believed to be a development of this character from the Almond; at any rate the Nectarine is positively known to have sprung from a bud, not from the seed, of a Peach. But in case it might still be argued that in some way there was a latent germinal influence in the cells of plants the results of cross-breeding many generations past—in other words, that the new appearance was simply a reversion and not a new creation, there had been some evidence in regard to the Sweet Potato offered to the Academy a few years ago, proving bud-variation quite independent of any supposed reversionary character derived from seminal influence. There are no closely-allied species to the Sweet Potatoes grown. Moreover, it does not flower in these northern regions; yet rootstocks had been exhibited here with tubers of two varieties distinct in colour, form, and other characters, growing on the same plant.

But the gentleman who sent the Apples to the Academy, Mr. Arnold, of Paris, Canada, determined to observe the effect of cross-fertilisation on Indian Corn. He procured a very peculiar variety, of which Mr. Meehan exhibited an ear, not known in the vicinity—a brown variety, with a circular dent on the apex, and raised one plant from it. The first set of flowers were permitted to be fertilised by their own pollen, in order to test whether there was any reversionary tendency in the plant, or the pollen of any other variety in the vicinity. The ear now produced was the result, every grain being like its parent. The Corn plant produces two ears on each stalk. As soon as the "silk" (the pistils of this second year) appeared, the pollen, in a "tassel," of the common yellow Flint Corn was procured, set in a bottle of water tied near the developing ear, the plant's own tassel having been cut away some time previous. After a short time this set of male flowers was removed, and a panicle of male flowers from a white variety was introduced to the same bottle, in order to afford it the opportunity of operating on the same female flowers. The result was the ear now presented. The base of each grain was of the yellow Flint Corn, but the upper half of the white variety.

Those who opposed the facts of evolution by continually cautioning its advocates against giving way to "imagination" and "brilliant speculations," he thought might be profitably benefited by their own suggestions. There was comparatively little to sustain the idea of reversion but fancied resemblance—and this resemblance not the result of a comparison of two facts side by side; but a fact on one hand compared with memory, and often the distant and vague memory of another long in the past. At any rate, in these experiments of Mr. Arnold, there was the test applied to guard against any objection of either reversion or evolution, which, though not absolutely perfect, was as near so as the vast mass of human experience was; and the result was, he thought, no escape from the conclusion, not only that there was an immediate influence on the seed and the whole fruit-structure by the application of strange pollen, but the still more important fact, hardly before more than suspected, that one ovule could receive and be affected by the pollen of two distinct parents, and this, too, after some time had elapsed between the first and second impregnation.

ESCALLONIA MACRANTHA.

This pretty but slow-growing evergreen, introduced by Messrs. Veitch's enterprising collector, Mr. William Lobb, from the Andes of Peru, is not half so much grown as it ought to be. Few flowers are really more handsome, while its rich-coloured



Escallonia macrantha.

foliage of the deepest green looks at all times clean, and in fact newly varnished, exhibiting a shiny appearance. It is as densely clothed with leaves as a Box tree, but they are almost as large as those of the Beech. It may be urged against the plant, of which the accompanying is a representation, that it is of slow growth, but in a suitable position it is not so, and it well deserves one of the best of sites. We have here a plant of it upwards of 10 feet high growing against a wall, and it would have been higher if the wall had been so likewise; but it is not necessary to train it to a wall at all times, for it will succeed very well by the side of a mound, or in some other sheltered position where it can lie upon the ground. Although it well deserves a wall, and thrives on one, I imagine that the habit of the plant is to be nearer the surface, for we sometimes see the upper part of a plant trained against a wall become sickly, its foliage turning yellow, and portions dying off, while at the bottom all is right. It will succeed, however, in the full sun, and its neat spikes of scarlet flowers look well nestling amongst foliage of the richest and densest character. Its flowers, also, like those of the Magnolia, are spread over a much longer period than in the case of most other evergreen trees and shrubs, so that there is always something to admire.

Those having a sheltered corner on the south side of a wall cannot do better than plant this shrub; but they should not attempt to nail it in too closely, rather let it assume the character of a shrub growing against a wall and not nailed to it, and it will be found to do much better.—J. ROBSON.

INDIAN AND EASTERN TIMBER AND FANCY WOODS.

CEDAR is a commercial term given to the woods of several distinct kinds of forest trees, the timbers of which are distinguished as Red and White Cedar, Barbadoes and Bermuda Cedar, Cedar of Lebanon, Pencil Cedar, Bastard Cedar, and some of those grow in America, some in Europe, and some in Asia. The lofty Deodar, a native of the Himalaya, with fragrant and almost imperishable wood, and often called the Indian Cedar, is sometimes referred to the genus *Pinus*, and sometimes to *Cedrus* or *Larix*, with the specific name of "*Deodara*." But Dr. Hooker is of opinion that the Deodar and the Cedar of Lebanon are identical. The woods of several of the Coniferæ are called Cedars. But in India the term Bastard Cedar is applied to the *Guzuma tomentosa*, while in New South Wales the term White Cedar is applied to *Melia Azederach*, and Red Cedar to that of *Flindersia australis*, and the name is also given to the woods of the *Cedrela Toona* and *Chircassia tabularis*.

In China a kind of Cedar, probably a Cypress, called Nan Mah, or Southern Wood, which resists time and insects, is considered particularly valuable, and is especially reserved for imperial use and buildings, and the Cedar wood of Japan, according to Thunberg, is a species of Cypress. The Cedar of Guiana is the wood of *Iceia altissima*. The Whitewood or White Cedar of Jamaica is *Bignonia Leucoxylon*. The word "Cedar," in the United States, is applied to various genera of the Pine family. The Virginian Red Cedar, a Juniper, is called Red or Pencil Cedar; the White Cedar of the southern swamps is a Cypress. Under the term Cedar, Col. Frith describes a reddish-coloured wood of Palghat, specific gravity 0.507, as a large tree, wood aromatic, and used for furniture; and under the name of Cedar Root, a very aromatic wood, used for ornamental furniture in Palghat.

Specimens of the wood of the Indian Cedar (*Cedrus Deodara*), and of the Cypress from the Himalayas, were shown by Dr. Royle at the Exhibition of 1851. The former has been introduced into England as a beautiful ornamental tree, and appears to promise well as a useful timber tree, as the wood works well and freely.

The Toona (*Cedrela Toona*) is a large and valuable tree, which grows in varying abundance at the foot of the Himalayas, also in the north-eastern provinces, and to the south in Bengal, and in both peninsulas of India. It is rare in the central provinces. In the Punjab it grows up to 2500 to 4800 feet, and is 7 to 12 feet in girth. Its growth there is rapid; its darkish wood is not subject to worm or warp, it looks well when properly polished, and is there a favourite for cabinet work. Mr. R. Thompson says it grows to a large size in the outer moist valleys of Kumaon and Ghurwal, and hill-men will not sell their trees. In Kumaon, trees with girths of 12 to 16 feet yield planks up to 3 feet broad, but 2 feet is the average. In Coimbatore it is a valuable timber tree of large size, and its reddish-coloured wood is used for cabinet-making purposes. It is not a common tree in the Bombay forests, but is found in some of the greenwood jungles about the ghats, and also in the hill range abutting on the Rajporee Creek to the south. The wood is a choice one for cabinet-makers' purposes, but it is not used for any others, except for house beams, when it is procurable in sufficient quantities. A tree is also found, Dr. Brandis tells us, on the hills and plains of British Burmah, plentiful in some districts, and if not identical with the Toon of Bengal, certainly nearly related to it. A cubic foot of the Burmah wood weighs 28 lbs. In a full-grown tree, on good soil, the average length of the trunk to the first branch is 40 feet, and the average girth, measured at 6 feet from the ground, is 8 feet. It sells in Burmah at 8 annas per cubic foot.

The lofty Deodara (*Cedrus Deodara*) is a native of the Himalayas, and has an almost imperishable wood. Dr. Hooker is of opinion that it is identical with the Cedar of Lebanon, and this view is generally concurred in. It grows at 4000 to 10,000 feet in many parts of the Himalayas, from the Ganges to beyond the Indus at Safed Koh, and the mountains north of Jellalabad. It is a very handsome tree, with a yellow-

coloured, easy-worked, straight-grained, and durable wood, and pillars of it in the great mosque are said to be of the year 804 Hejira, but those in the Hindoo temples there are said to be six hundred or eight hundred years old. Insects do not attack it. It is strong and elastic, and not too heavy. It is used for knees of boats, and for all building purposes. A tree takes from 80 to 120 years to reach 6 feet of girth, attains a height of 100 feet, 120 feet, even over 200 feet, and girths of from 25 to 42 feet. It is the best of all the coniferous timbers, and yields a valuable empyreumatic oil.

With reference to the central province forests, Major Pearson gives some very valuable information. At the present time the only forests in which teak of good size is procurable are, first, the forests of Boree, at the foot of the Puchmuree or Mahadeo hills, and those of Sowleegharb and Jangurh in Baitool; second, the forests around the Bormeyr River in Mundla; third, the forests of Lahora, Konkeir, and Panabarras, of which the latter is the centre, between Raepore and Chandah; and fourth, the forests of Aheree on the Godavery, between Seroncha and Chandah. The last two named belong to zemindars, the first two only are Government property. There is also teak found of large size in the Gurjat States, 120 to 150 miles south-east of Raepore; but it is so remote that it can hardly be considered as belonging to the available resources of the country. It is believed, however, not to exist in any extraordinarily large quantity; indeed, Lieut. Forsyth's report on the Kuvriar forest represents twelve thousand trees in all. In Boree, including the Baitool forests (which latter, however, are practically worked out), there may be ten thousand available timber trees. In Mundla there are about half that quantity remaining. In the forests of which Panabarras is the centre, there is still practically a perpetual supply, if they are only worked with care, as a vast supply of trees are there found in every stage of growth. About Dorwa in Panabarras alone he calculated there were ten thousand trees available for felling, and thirty thousand more from 2 to 2½ feet in girth, all fine promising young trees. From the distance of the forests, and excessive weight of the timber, Saul does not come into much use. There is, however, a fine forest (a solitary patch) in the Daniwah Valley at the foot of the Puchmarree hills, which is now being worked, and the executive engineers at Jubulpore and Saugor supply themselves with this timber from the Rewah State, fifty or sixty miles east of Jubulpore, and from the Government forests in Beejragogurh. Of all other timbers—good, bad, and indifferent, and many of them bad, the demand for sleepers for both branches of the Great Indian Peninsula Railway, east of Bawalul, has almost cleared the forests within fifty miles of the railway lines of every tree that would yield a sleeper; nor has the supply of them done much good, as a very few years will have to elapse before all have to be replaced. This is being done partly by Saul, in a very small degree by Teak, but chiefly by iron-girt sleepers.

Western Mysore produces valuable timber trees, useful for building and cabinet-making, such as Boghy, for furniture, strong and tough; Soojhal, useful for all purposes, in colour a light brown, long grain, and rather open; Hoonsay, with red and black-streaked heartwood, close-grained and knotty, which makes excellent naves of wheels, oil-mills, mallets, &c., and is valuable for brick and tile burning; Biti, an open-grained timber, something like rosewood, which makes up into good furniture of all descriptions; Honagul, a building timber, also used for furniture; Wulla Honay, a light-coloured, open-grained timber, a very excellent description of wood suitable for house-building and furniture; Nundee, of which substantial bridges are built; Nellee, of a dark flesh colour, smooth, very close grained, compact, and tough, making fine veneers, does not decay under water, and is well adapted for turning; Novoladdi, a greenish-brown, dull, close-grained timber, which polishes well, and is much liked by builders and others; and Handiga, useful for furniture and for the turner, &c.

These are but a few of the forest products of India, but will serve to show the vast and, comparatively speaking, still undeveloped timber resources of that country.—(*Building News*.)

CHANGING THE COLOURS OF FLOWERS.—The *Gazette des Cam-pagnes* states that M. Hucghe has succeeded in changing the common Cowslip from its natural yellow to an intense purple by merely transplanting it into richer earth. The colour of plants can be readily varied by mixing certain substances with the soil. Wood charcoal will darken the hue of Dahlias, Petunias, and Hyacinths. Carbonate of soda turns the last-

mentioned flowers red, and phosphate of soda alters greatly the shades of many plants.

GRAND YORKSHIRE GALA.

If I was last week astonished at the excellence of the Leeds Show, I was still more so at that of the great Show held at York, and which I had now for the first time the privilege of seeing; and I think if some of those gentlemen who seem to imagine that the poor horticulturists who live in country parts must be a long way behindhand, could only have seen what I did, they would have considerably modified their opinion. When I say that a large round tent was filled with plants which Mr. Baines would find it a difficult matter to excel, and that to this were added two tents of 300 feet in length filled from end to end with plants and flowers, they will readily imagine that there was something to see. Nay, more: I may add that excellence was the characteristic of the exhibits, and that in some parts these northern growers are in advance far of us southerners.

I could not have been present on a more auspicious occasion, for Mr. Stewart, who has for thirty years or more been an enthusiastic grower of florists' flowers, Auriculas, Carnations, &c., and also for a number of years President of the Yorkshire Society, was this year Lord Mayor of York, and the occasion was signalled by two events: our friend, Mr. Williams, of Holloway, gave, in honour of it, a very handsome silver cup in addition to the first prize of £25 given by the Society, for the best collection of stove and greenhouse plants, which was gallantly won by Mr. Cole, of Manchester, with some magnificent plants, comprising *Hedera tulipifera*, *Cycas revoluta* in flower, *Ixora Colei*, and others; and a number of the Lord Mayor's friends had seized the opportunity of presenting him with a very handsome silver epergne for flowers, in recognition of their esteem. This was gracefully presented by Mr. Dean in the name of the subscribers at the luncheon and acknowledged in fitting terms by the Lord Mayor.

It may give some idea of the extent of the Exhibition when I say that in the class for six Tricolor Pelargoniums there were ten entries, and twelve for six Bronze, that there were in all eighty-four entries for Pelargoniums, and that the difficulty was not so much to decide what were the best, as to determine which were to be rejected. I know that my excellent friend Mr. Peach and myself can bear witness that we never had a harder task than the one we had to fulfil at this Show. I was particularly struck with the good colour of the foliage of the variegated Pelargoniums, for one often sees them so defective in this respect, and the season has been so unfavourable in its absence of sunlight, that the exhibitors deserved great credit for the manner in which they had brought their plants up to the mark. One exhibitor had trained his plants so as to make small pyramids of them, and exceedingly effective they were. I have only to add that as at Leeds there was a warmth and heartiness about the whole thing that contrasted most favourably with our slowness in the south. The indefatigable Secretary, Mr. Wilson, worked most assiduously, the Committee ably seconding him.

It is unpleasant to notice any drawback, but there was one, which was commented upon in strong terms by Mr. Williams. A cultivator at Derby had given notice of his intention to exhibit one hundred plants, many of them of large size. Not only did he not appear, but had not even the courtesy to send a message, and it was only through a friend on the morning of the show day that the Secretary had any notice of the fact. This I cannot but designate as unpardonable, or as Mr. Williams said "cruel," disarranging as it did the plans made, and but for the excellence of the Show it would have been more serious still.—D., Deal.

FRAME POTATOES.

We have a vast array of names of sorts of Potatoes that are said to be good for frame cultivation, many of which have, no doubt, merits; whilst a great many, and I may say a majority, have no claim from any merit they possess, to be honoured with a position under glass.

The first desirability of a frame Potato is, that it has a stiff short haulm; 2nd, That it gives, at a short a time as possible after planting, tubers of a useable size; 3rd, That they be even-sized—in fact, large with a very small quantity of small; and 4th, Early attains a mealy state of the tuber, and not watery waxy lumps, which are neither wholesome, nor, as a rule, come up to the standard of a forcing or frame Potato in other respects.

It is not my intention to pass in review all the kinds of Potatoes that are used for, or, at least, put forward as suitable for, frame culture, suffice will be to allude to those that I have found the best. The first that I shall mention is Mona's Pride, which has a stiff sturdy haulm, is not given to have more than one or two strong growths, and these give large,

even-sized tubers, that early attain maturity. It is a short, thick, kidney-shaped tuber, and is a desirable forcing Potato.

Myatt's Prolific Ashleaf fully deserves its name of Prolific, for it gives fully twice as many tubers as Mona's Pride, but they are individually much smaller. Taking the whole produce it is not more than Mona's Pride, weight for weight; and as there are small in the produce of the Myatt's, but none or few in that of Mona's Pride, I must pronounce in favour of the latter. I have so long had Myatt's Prolific good—in fact, considered it the best of all for frame work and pots, that I am loath to proclaim Mona's Pride its superior. Small Potatoes may not be of much account in out-door culture, the loss is not so much felt or noticed; but it is very different with those in pots or frames, as the small are of no account.

Veitch's Improved Ashleaf with me has a very short stiff haulm, gives a number of large, fine, clear-skinned tubers, even-sized, attains ripeness early, and with very few small. It produced the tubers on a rather long string, and therefore at some distance from the root-stem, unlike either Mona's Pride or Myatt's Prolific, which have them close to the stem. I had some of Veitch's in pots which had the tubers right at the bottom of the pots (12-inch), some under the large crocks used for drainage. I find the produce of a three-light frame planted in November to be in April 24 lbs., whilst a three-light frame of Myatt's Prolific planted also in November and taken up in May, yielded 18 lbs. Here, then, we have a nett gain of 6 lbs. from a piece of ground 12 feet by 6 feet, or on 8 square yards a gain of nearly 1 lb. per yard. It is only right to say, that both the kinds planted together were fit for use early in April, only not being wanted they were not taken up.

I have no experience of the round kinds of recent date, and what I have leads me to the conclusion that they must be of a very different type to what I have grown, or they are from giving more small than large, and much longer in attaining firmness than kidney sorts, of very little value as frame Potatoes. I shall be only glad to learn I have formed erroneous impressions of the round sorts.

I now come to what may not concern me as a cultivator—I allude to the identity of Veitch's Ashleaf Kidney Potato. I find in Barr & Sugden's catalogue, 1873, page 66, that Gloucestershire Kidney, Rivers's Royal Ashleaf, and Veitch's Improved Ashleaf are described as "First-class Potatoes, but resembling each other so closely that it has been asserted that the best authorities fail to distinguish the one from the other." At reading this I must confess I was taken aback, for Rivers's Royal Ashleaf is later by ten days to a fortnight than the old Ashleaf, and Gloucestershire Kidney has not, so far as I know, been put forward as a kind equalling the Ashleaf in earliness, but as a kind to succeed the Ashleaf. I should not care much as to what name a really good thing was known by, but to know that it is called by three is, to say the least, perplexing; and, notwithstanding that we have it "asserted that the best authorities" agree in the three being one, it would be very annoying to order a supply of sets to plant to come in at a certain time, and, assured that Gloucestershire Kidney or Rivers's Royal Ashleaf are the same as Veitch's Ashleaf, take one of the two former in place of the latter, assured that they are the same, only to find, however, that they are not fit for use ten days to a fortnight after the time they are wanted, or the time Veitch's Ashleaf, supplied true, would come in. It is with me the earliest of all the forms of Ashleaf, both in pots, in frames, and out-doors, and the most prolific. Planted in pots November 20th, 1872, we had the first dish February 24th, 1873; the last in a frame, planted March 5th, were taken up June 5th, dry and floury when cooked.—G. ABBEY.

NOTES AND GLEANINGS.

THERE are two points in the STRUCTURE OF THE HEARTSEASE (Viola tricolor) which are not mentioned in Mr. Bennett's interesting article on its fertilisation, but which, I think, deserve notice. The first of these is the lip of the stigma, which closes the entrance to the spur and must be pushed back by an insect trying to reach the nectary, thereby bending down the head of the stigma, so as to sweep any pollen that may be adhering to those parts of the insect which come into contact with it into its receptacle; while, in withdrawing, the insect necessarily presses against the lower side of the lip, and raises up the whole stigma, thus rendering self-impregnation impossible, or at least highly improbable. Modifications of the same contrivance may be seen in many other flowers—e.g., Pinguicula, Iris, &c.; it reaches, perhaps, its greatest perfection in Mimulus

and Bignonia, where, to the usual mechanical disposition of the parts, there is added irritability of the stigmatic lobes which close together spontaneously when touched, expanding again after a while, if not already pollinated. The second point to which I have alluded is the close hairy lining of the fore part of the spur, forming a narrow groove at the base of the lowest petal. This groove generally contains a quantity of pollen that has fallen from the overhanging anthers. There is also a small tuft of hairs at the base of each of the lateral petals, arching over the essential organs, and forcing an insect to approach the nectary from below. These lateral tufts are present, I believe, in all the Violets, but *V. tricolor* (including therein several sub-species) is the only British species which has the spur lined with hairs, as well as the only one not known to bear self-fertile cleistogenous flowers. Although the flowers of the wild Heartsease are quite scentless to our blunt organs, does it follow that they are necessarily so to an insect's far more delicate sense? (The flowers of *V. palustris*, which are nearly unicolorous with a few dark lines pointing to the nectary, are apparently scentless; but after standing for a short time in water in a warm room, they become quite sweet.) Some of the cultivated Pansies are very sweet, and I am not aware that this quality has ever been made an object for selection by florists. These large garden Pansies are much frequented by *Bombus muscorum*, which may be watched while performing the act of pollination, as described by Professor Hillebrand.—*W. E. HART, Kilderry, Co. Donegal.*—(Nature.)

—MR. T. MEEHAN last year called the attention of the Academy of Natural Sciences of Philadelphia to the fact that in some Scrophulariaceae plants, such as *Torenia* and *Mimulus*, the bilobed-flattened stigmas closed when touched, as does the leaf of *Dionaea muscipula*.

—THE largest Vine in the world is to be found near Santa Barbara, California, and certainly, from the account given of it by the *New York Herald*, it seems to put the famous Hampton Court Vine to the blush. The trunk of the SANTA BARBARA VINE is nearly 4 feet in circumference where it leaves the ground, and continues the same size for 8 feet up, where it branches out very regularly, and, although kept well trimmed back it covers a surface of some 4000 square feet. Eight thousand bunches of Grapes, weighing 12,000 lbs., or 6 tons, were picked from it last year. It is owned by an old Spanish woman who cannot speak a word of English, but who knows very well how to calculate correctly the amount due to her for a drink of wine made from the Grapes of the "big Vine," which everyone is expected to drink who visits it. The age of this Vine is variously estimated at from thirty-five to fifty years, and romance has woven the tale that the original cutting was given to a Spanish girl by her lover as a riding whip, and that she planted it as a memento of their engagement. The appearance, however, of the Spanish lady who now owns it is such to lead visitors to the conclusion that she never could have had a matrimonial engagement, or that if any such contract was ever entered into, her lover was perfectly justified in forgetting it.

GARDENING IN THE WEST.—No. 3.

VISIT-WORTHY PLACES NEAR BATH.

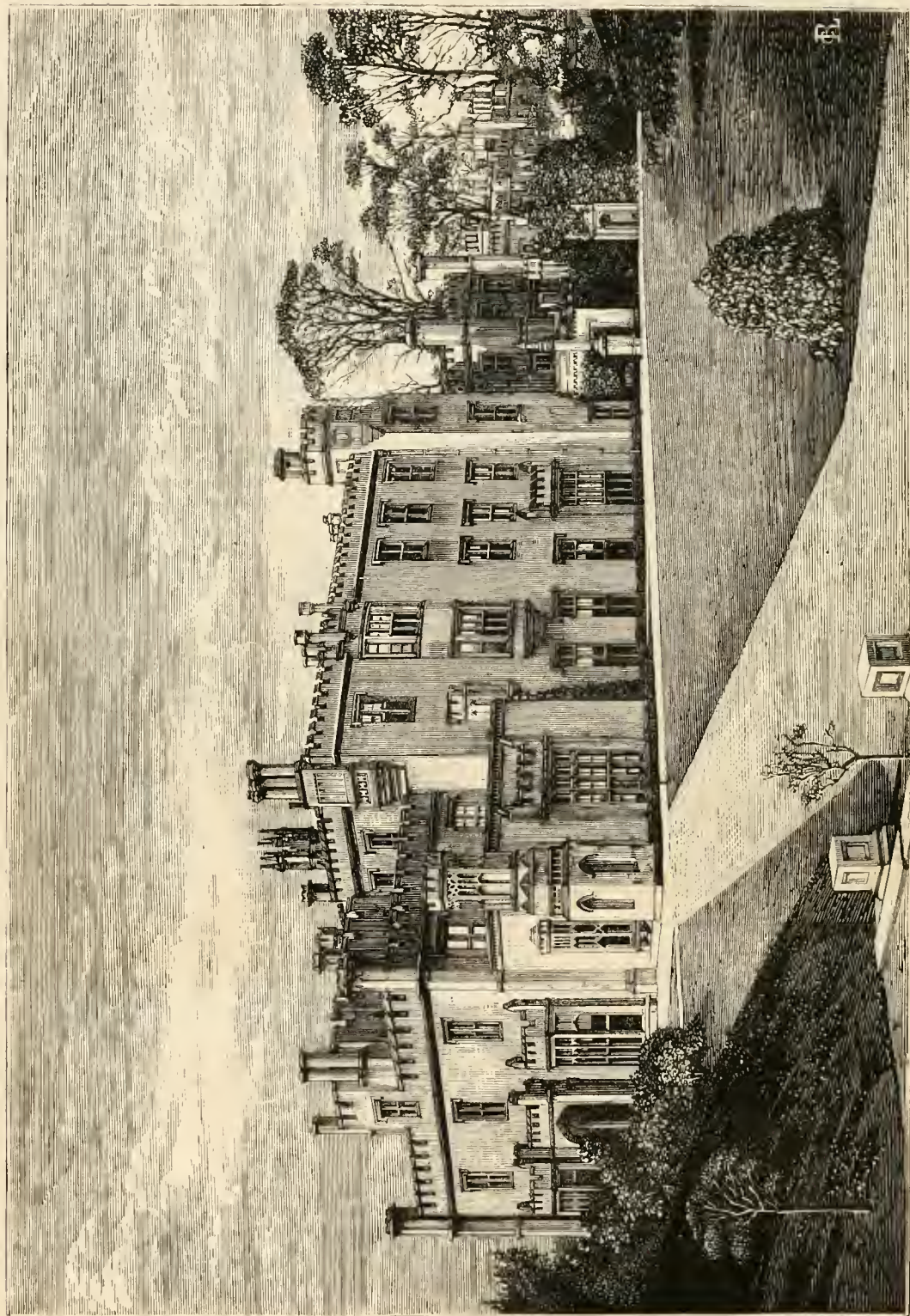
LEAVING Bath by the Great Western Company's line to Weymouth we reach Trowbridge, at one time one of the decayed towns of the West of England cloth districts, but now one of the most prosperous, and nothing indicates its prosperity more than the encouragement of horticulture and the extent to which it is practised in the neighbourhood. During the last thirty years there has sprung up at Hilperton, only a mile distant from the town, a considerable nursery of general stock through the energy of Mr. S. Walters, who is now well known in the West of England as one of the most successful of plant-growers. With some of the fine old-fashioned specimens, such as Heaths, Chorozomas, *Rhododendron Gibsoni*, *Rogeria gratissima*, *Statice Holfordi*, and others we saw there, he appears to excel. On the road to Hilperton we pass two villa residences, The Prospect and Highfield, which are models worth imitating for the skillfulness with which they are designed and the neatness with which they are kept. We could not but indulge the thought that the owners of both were readers of *THE JOURNAL OF HORTICULTURE*, and devoured its pages with avidity.

ROOD ASHTON.

But the great place in the neighbourhood of Trowbridge is Rood Ashton, the splendid domain of Walter Long, Esq., whose family has been settled here for many centuries; yet we

have sought, but without success, for a history of this residence, because, having a slight knowledge of Anglo-Saxon, we concluded that the original name was *Road Æsdun*, "the sweet quiet hill of the Ash trees." The park is of immenso extent—we do not know how many acres, but it makes a very distinct appearance on the Ordnance map. The entrance to the park is about a mile distant from the town of Trowbridge, and on approaching it one is reminded of the remark of Repton, that the entrance to a place of importance should never be at right angles to the public road, but branch from it, and be so much wider than the road as to diminish its importance and give greater importance to the approach. This has been well managed at Rood Ashton, for the turnpike road is dwarfed to the dimensions of a lane, and the entrance to the approach appears really to be a continuation of the turnpike road. From the lodge to the mansion is a distance of upwards of two miles. The direction is that of a curve, and the road is flanked on either side by a double line of Scotch Firs, at present small, perhaps not more than twelve or fourteen years old, but which, when they have attained greater dimensions, will have an excellent effect, and when seventy or eighty years old will become one of the finest avenues in England. Here the Scotch Fir succeeds to perfection, judging from specimens we observed in the park, and when the trees forming this avenue attain such dimensions as these the effect will be grand and imposing. It is surprising that this stately and picturesque tree is not more planted for this purpose. With the exception of the Lime and the Oak there is a great poverty of good avenue trees in England. The English Elm and Horse Chestnut cannot be said to be good avenue trees; the former, when it attains its full growth and greatest beauty, being so liable to suddenly lose its branches and become a disabled, dismantled, and dangerous object; while the Horse Chestnut is comparatively a short-lived, and, when cut down, a worthless tree, and it very early loses its foliage in autumn. Behind this avenue of young Scotch Firs there are solid masses of plantation, which for some distance give the approach an enclosed appearance; but after proceeding some distance the park opens up, and then the road passes through what appears to be a piece of ancient forest, consisting of old pollard and coppice Oak. On emerging from this the park expands in all its beauty, and the house is seen in the distance. The trees in the park consist almost entirely of English Elms, which luxuriate in this part of the country, and which for size and beauty will vie with any in England. Our only objection to them is that they are too crowded, and really spoil the fine effect which the park would otherwise have if the single trees were removed and the groups only were left. The place may be said to be all park, which reaches close to the house (see accompanying engraving), there being a flower garden on the south side only, and a rather extensive lawn to the east; but of dressed grounds there are scarcely any. But Mr. Long has recently enclosed a small portion beyond the lawn, which has been well planted, and which in time will add to the beauty of the place.

Before we visited Rood Ashton we were warned not to expect to see anything in the way of gardening. This was said in general terms, and we went, as we were told, merely to see the park. Now it depends very much on what people mean by gardening. Gardening of late years has, unfortunately, become to mean flower-bedding, and unless a place can exhibit a great expanse of varied colours on lawns and terraces, it, in the minds of some, is not a place for gardening. We at once tell the people who hold these views that Rood Ashton is no place for them, and yet there is good gardening there—high gardening, if you like, which is not often surpassed. There are fruit-gardening and kitchen-gardening, under the direction of Mr. George, which are well worth seeing; a profusion of everything, and no stint. There are 100 yards of Peach houses, 40 yards of vineries, 95 feet of Pine pits, and 90 feet of other pits. The Vines were hanging as thick of bunches of fruit as it was prudent to permit them, and are in the rudest health. The earliest vinery was still well supplied with fruit of fine Hamburgs, to the excellence of the flavour of which we can testify through Mr. George's kindness. The house of Muscats is splendidly set, and there will not be an imperfect bunch or berry in it. The way by which Mr. George insures this result is by going over the bunches when they are in bloom, and brushing them over with one of those long-bristled brushes used by painters, and called a duster. This not only distributes the pollen, but removes the globule of moisture secreted on the stigma, and which prevents the pollen fertilising the



ROOD ASHTON.

pistil. "I give them a good dusting," said Mr. George, "you can't hurt them."

The great range of Peach houses is a sight worth seeing, the trees being in the greatest luxuriance and literally studded with fruit. Mr. George's experience of Early York as a forcing Peach is that it grows well and sets well, but goes off in stoning, and that Early Grosse Mignonne is far superior to it for this purpose. Here is something new—a new mode of setting Peaches. Mr. George says, "I have not time to fiddle about with camel's-hair pencils fertilising the Peach blossoms, and so whenever the first house is ready I bring in a hive of bees, and feed them well on sugar and water (no beer). When

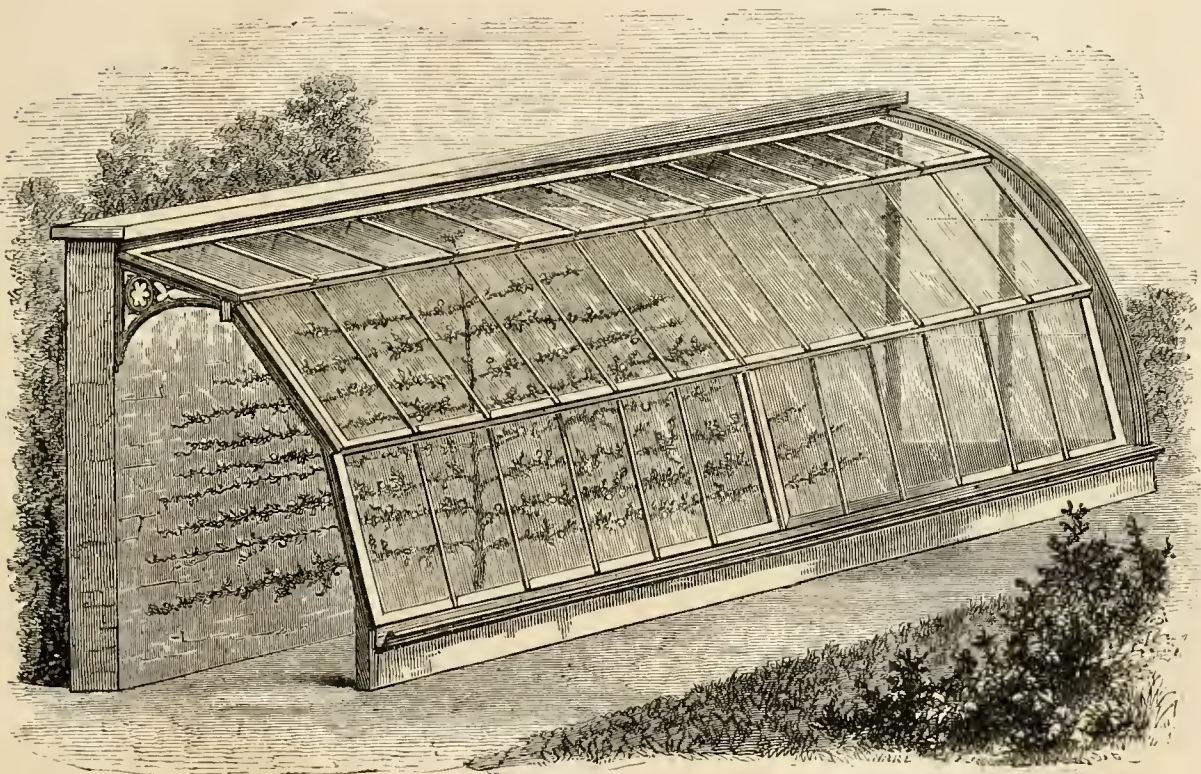
they have remained as long as is necessary I pass them on to the next house, and then on to the next, and they do the work far better than I can, while my time is saved, and I am able to be engaged on other matters." The result proves the excellence of the practice, for we never saw finer crops, and the trees were thinned four times.

We left Rood Ashton wiser than we went, and charmed with a visit which at first promised to be so unproductive. We must caution those who, after reading these lines, may determine on visiting this splendid domain, that it is not a "show place," and whatever gardening is done is with a view to domestic use and utility.

PLANT PROTECTORS—ABSURD NAMES.

ONE of the follies of the tradesmen of the present day is the absurd application of names to their articles—names totally un-understandable or even rememberable by the vast majority even of the educated. I inquired recently of a friend, a first-rate gardener though an amateur, which he considered the

best glazed shelter for wall fruit, and he replied—"The Crymobothus." "What, in common language, is that?" and he acknowledged that he did not know, but that it is a glazed shelter which allowed plants, seedlings, and other things to be grown under its shelter, whilst it protected the wall trees.



WALL-TREE AND PLANT PROTECTOR.

Now, can you tell me where this foolishly-named shelter is to be obtained, why it is so named, and whether you consider it efficient?—AN AMATEUR GARDENER.

[We entirely agree with you as to the absurdity of such names—it extends even to the ready-made-clothes dealers, for we saw in Oxford Street that "Idoneous trousers" were there to be had! However, as we once heard a patent-medicine man say, "I'm cursed with the name of Snooks, but that's nothing to do with my medicine," and the Crymobothus is a good protector from frost (which is a literal interpretation of the

name). We now publish an engraving of it, which we have obtained from the maker, Mr. E. Lloyd, Horticultural Works, Grantham. The sashes, made either of iron or wood, project 2 or 3 feet from the wall, supported on iron brackets. They are so constructed that if desired one or more sashes can be projected inclining to the ground at different angles. The sashes are hung on hooks, and in summer could be all removed, or each alternate sash could be made to open for ventilation, and netting be fixed over the opening at a very small cost.]

GOLDEN CHAMPION GRAPE.

GOLDEN CHAMPION has done exceedingly well with us this season as a pot Vine. A thoroughly-ripened one-year-old cane of it, which was gently started in a successional Pine stove in December, has perfected some of the finest examples I ever remember seeing. The heaviest bunch when cut weighed 2½ lbs., with berries as large as those produced on any planted-

out established Vine. So perfect were they as to resemble a very large-berried highly-finished bunch of Muscats. And what about the spot? Simply this, no spot or blemish was over perceptible—the result of precisely the same treatment as that given to Hamburgs, Muscadines, Frontignans, &c.; 10-inch pots are the size used. Large pots for Vines, like

large pots for Pines, are fast becoming a thing of the past. As an eminent Vine-grower sagaciously remarked to me the other day, that it is a pot full of roots, and not a pot full of soil, that is wanted to produce fruit; and how portable and cheap in transit compared with those 16 and 18-inch ones! The one-year-old canes are preferred before the cut-backs, which are consequently two years old. Labour and space awarded the latter I regard as entirely misapplied when fruit equal in quantity and quality can and is had from those one year old. I do not write this brief notice of the Champion with the view of advocating its extensive planting. Like Mr. Pearson, of Chilwell, I take the Duke of Buccleuch to be superior in every respect, only the Champion can be grown to that state of perfection which originally gave it just celebrity. —J. M. C., *Galashiels*.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE June meeting of this Society was held on the 2nd inst. Sir Sidney S. Saunders, Vice-President, in the chair. Various donations to the library announced, and thanks voted to the donors. A certificate in favour of C. W. Dale, Esq., of Glanville Wootton, Sherborne, Dorsetshire, was read for the first time.

Mr. Bond brought to the Meeting some seeds of *Gleditsia sinensis* which had been sent to him from Japan, but which were all destroyed by a species of *Bruchus*, of which he exhibited several live specimens. Mr. Müller exhibited a remarkable *Psyche* case which had been sent by Mr. Rothney from Calcutta. It was composed of thorns of equal length (about 1½ inch), arranged with the points all in one direction, so as effectually to bar the entrance against an enemy. Sir Sidney Saunders exhibited a collection of Briar stems from Epirus, which, on being split open, exposed numerous specimens of the larvae of several species of bees, all of which were alive. He also exhibited a number of the perfect insects which he had reared from larvae. Amongst them were *Raphiglossa omenoides*, *Psiliglossa odyneroides*, *Trypoxylon albipes*, *Odynerus exirpes*, *Prosopis rubicola*, and three species of burrowing bees (*Osmia* sp.).

Mr. Müller communicated some notes on the discovery by Dr. Joly of Toulouse, of a nymph belonging to the genus *Oligoneuria*, the immature stages of which had been hitherto unknown. Drawings of the upper and under sides of the nymph accompanied the notes.

Mr. Wallaston communicated a valuable paper on the genera of the *Cossonidae*. It comprised (1), a catalogue of the several groups, arranged systematically and tabulated; (2), full generic diagnoses, taken *seriatim*; (3), observations (diagnostic and geographical) on each separate genus; (4), brief characters of 139 species not hitherto recorded; and (5), a complete list of the particular members of the family (amounting in all to 253), the structural and specific character of which the author had examined with the greatest care, being the material from which the paper has been compiled.

The Secretary read a letter he had received from Mr. Roland Trimen, of Cape Town, containing remarks on the Rev. E. P. Murray's notes "On some Variations of Neuration observed in certain *Papilionide*," published in the Proceedings of the Society of November last, and referring some exceptional cases of neuration to reversion to ancestral characters, pointing to a remote community or origin between *Papilionide* and the higher *Heterocera*.

Part 2 of the Transactions for 1873 was on the table.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE must be taken of the first good shower of rain to get out the main crops of Brussels Sprouts, Broccoli, Savoy, &c.; until then they had better remain where they are. Recently-transplanted plants must be constantly kept watered, and the ground about them occasionally stirred. Where the Cape varieties of *Broccoli* have been sown in drills, thin them out to one plant every 2 feet, and immediately afterwards water those left. As soon as the weather will permit, plant out the main spring crops. A little more *Carrot* seed may be sown to produce a late crop for drawing young. Loosen the earth between the main crops where it is baked-down hard. Some of the late sowing of *Cauliflowers* should be transplanted as early as the weather will permit; if the planting of them can no longer be postponed, they must be kept watered until they make fresh roots. No culinary vegetable that we are aware of demands larger supplies of water at this season than *Celery*. The first crops run in a short time if not kept moist, and the latter ones are very much checked; the earth should be loosened about the plants whenever it appears crusted. The *Cucumber* plants on the ridges will be greatly benefited by being mulched with short grass or litter of any kind; they should be previously watered, which may be done generally early in the morning. Where the

seed of *Lettuce* has been sown in drills, thin the plants to 1 foot apart. This is a good time to make *Mushroom* spawn for winter and spring use. After the bricks are made and partially dried they may be placed in layers in an open shed, with a thin layer of spawn from the old beds which have done bearing between each course; the whole should afterwards be covered with dung sufficient to keep it moist and warmer. Keep up a succession of *Small Salad* by repeated sowings in the open ground in a shady spot. It is necessary to sow *Spinach* once a fortnight, let the weather be what it may, as it soon run to seed; keep it watered during dry weather. Keep *Tomatoes* trained to the wall and well supplied with water, or but very little fruit can be expected.

FRUIT GARDEN.

Continue to pay every attention to wall trees; water those that require it, or they will drop their fruit. Pears, Plums, and Cherries should have their summer pruning. Lay the runners of *Strawberries* into 60-sized pots, this being the best method of procuring good strong plants for forcing. Protect fruit from birds.

FLOWER GARDEN.

Propagation of stock for next season must soon receive consideration, so as to have strong well-established plants before winter, and without the necessity of keeping them so close or warm as to induce weakly and watery growth. It cannot be too often repeated that to be able to winter bedding stock safely with ordinary care, the cuttings should be put in sufficiently early in the autumn to allow of having them well-established, and fit to be exposed to the open air by the middle of September. Begin with those which are found most tedious to propagate. *Hollyhocks* are general favourites, but they do not afford cuttings freely, and in general are not over-plentiful about most places. These should therefore be examined often in search of any cuttings which they may afford, as those rooted early will afford strong plants for next season. Attend to the tying-up of these and *Dahlias*, and go over the masses of *Verbenas*, and frequently for the purpose of regulating the growth, so as to keep it neat and orderly. Continue to prick-out seedling *Auriculas* in pans or boxes, shading them from the sun. *Polyanthuses*, if we continue to have showers, may be parted to advantage now, renewing the bed with decayed cow manure and leaf soil. Some growers shorten the leaves; it is most advisable not to do so. The general collection of *Tulips* may now be taken up, provided the foliage has assumed a yellow hue. Shake the soil clean from the roots, but do not yet remove the fibres or outer skin from the bulbs; place them in their respective compartments in the boxes, or wrap them in very thin paper called "cap paper," writing the name on each. The late dry weather has been seriously against the *Ranunculuses*. Any roots, the foliage of which has begun to decay, must immediately be taken up, or rainy weather will cause them to start again, to the certain destruction of the root. In sunny weather dust the capsules with farina of the best-formed semi-doubles you can obtain. Follow the directions given for *Carnations*, by pinching off the laterals, disbudding, tying, keeping free from aphids if possible, &c. Put in pipings as recommended for the *Pink*, marking each lot of cuttings, so that when the layers bloom from which they were taken if they should chance to be run or full of colour, the pipings from each foul flower may be destroyed. Carefully stake *Dahlias*, &c.

GREENHOUSE AND CONSERVATORY.

Attention must soon be paid to late-growing plants in borders, for while in active growth they require a good deal of water, and insects are more troublesome than in the case of plants at rest. Give *Luculias* especially plenty of water at the root, and an occasional supply of clear weak manure water to old plants that may be growing freely until they have made sufficient wood to insure a good display of flower. As has been previously stated, however, manure water must not be given to young specimens in vigorous growth, as in that case it would only induce too gross a growth, a condition in which they seldom flower profusely. In order to secure fine heads of bloom from this plant, it should be allowed a few weeks of comparative rest after, say, about the middle of next month, keeping the roots rather dry, and exposing the plants as freely to air as can be done without injury to the foliage or the health of their neighbours. *Brugmansia sanguinea* is also a useful plant for winter and early spring flowering, when managed so as to have it pruned and rested about this time. See that large specimens of *Camellias* are not allowed to get too dry at the root after they have set their buds, for shedding of the latter is often due to this cause. Young and vigorous plants, however, frequently require to be watered rather sparingly to prevent their making a second growth. *Cinerarias* for late flowering should now be growing freely, and should be shifted when necessary; for if they are to form large specimens for flowering late in autumn or early winter, they must not be permitted to sustain any check. Get cuttings of favourite *Roses* rooted and pushed forward, so as to have them sufficiently strong and established to stand the winter. Common *Pelargoniums* are now being

struck from cuttings in the open ground round London in multitudes. The old plants might be shaken out of their pots and planted in the open ground to be taken up early in the autumn, so as to get well-established in the pots before winter; they would make excellent plants for forcing next spring. The mid-summer cuttings will make strong plants by next October, and if they are well encouraged early in the spring they will make beautiful flowering plants this time next year. All the best varieties of the Chinese Primrose should now be divided and planted-out in a shady situation in very rotten leaf mould, to be taken up next September for winter flowering. Seedlings of them should also be planted-out now in spare pits well shaded, there to remain until they all flower, when the inferior sorts may be thrown away.

PITS.

Prepare to make a large plantation of your choice dwarf and young plants in these useful structures, turned out of the pots for two or three months in suitable composts. One who has not seen the good effects of this plan can hardly conceive the improvement it makes in the plants, particularly on Heaths, Epacris, and other delicate plants which are difficult to manage in dry hot seasons under the ordinary pot culture.—W. KEANE.

DOINGS OF THE LAST WEEK.

SINCE writing last week's doings we have heard of the rain falling in torrents around us. We did not miss it all. It rained one morning for six hours, during which a little over half an inch fell, for which we are thankful, as the drooping plants require it very much. There seems to be considerable attraction for the rains to the north and south of us—on the one hand the Thames valley, and on the other Epping Forest. We have often been anxiously looking for rain when there has been a sound of abundance; but the heavy clouds rising in the west have divided, watering the gardens and fields of our neighbours and leaving us dry.

KITCHEN GARDEN.

As there is now plenty of Green Peas we have discontinued cutting the *Asparagus*. The ground had got full of weeds and young plants from self-sown *Asparagus* seeds. We had to pick out all between the plants in the rows, running the hoe over afterwards. Had we more beds of *Asparagus* to make we would plant in the same way as we did these. The plants are 18 inches apart, and 2 feet 6 inches between the rows. The plants are yet young and the crowns are near the surface, so as a winter dressing some rotted manure is spread evenly over the whole quarter, and over this some fine loam. When the crowns are buried sufficiently deep it will have a good dressing of rotted manure only, which will be lightly forked-in between the rows. The dressing should be put on in November, and forked-in some time in February when the weather is fine.

What splendid crisp *Lettuce* we are cutting this year! The sort is Hicks's Hardy White Cos. No other sort is grown with us now, except this and Paris White. We have planted-out a few trenches of Celery, and as the early Cabbage is cleared-off the ground is thrown up in trenches for succession crops.

Hoeing and sticking succession crops of *Peas*. Another season we will grow more of the dwarf *Peas*. Blue Peter on a south border just coming in is a splendid crop; they have just a few short sticks placed to them to keep the pods off the ground.

The *Strawberry* beds are now requiring attention. The fruit ought to be thinned, hundreds are set on every plant. We will place a few sprays of Elm, Beech, and Hornbeam round each plant; the fruit will then hang over the clefts and be kept clear above the ground. It will ripen and colour so much better in this way, and be out of the way of slugs and other crawling vermin. We first tried a few rows in this way, placing clean straw over the other part of the bed, and the produce from the rows supported with sticks was much better in quality, and double the weight of fruit was obtained.

Clouds of black aphids attacked the wall Cherries and other plants. The fecundity of this pest is amazing. We left off working amongst the bush and pyramid trees, and attacked the aphids with water in which soft soap and tobacco was dissolved. We either dipped the shoots in the water or washed them with a sponge. We have finished cutting-back the shoots on the Pear trees; it is quite early enough if the Apples are done in a week hence.

FRUIT AND FORCING HOUSES.

In the *pineries* there is little attention required, except watering the plants, airing and damping the houses. Many persons have an idea that Pines are difficult to manage, and that their culture is attended with great labour and expense. The Pine is as easily grown as any other fruit, but in many instances the plants are checked by having the roots injured by being plunged in fermenting material when it is too hot. We seldom renew our Pino beds more than twice a year, a sufficiently high temperature being maintained in the beds from the hot-water pipes. The best time to renew the beds is when the plants have been

reotted, the higher temperature caused thereby causes a more active root-growth. The house where the fruit is ripening should be aired freely, and, if the weather is dull and cold, the heating apparatus should be moderately warm.

Vineries.—In the early houses, where the Grapes are quite ripe no artificial heat is required. We now leave the ventilators fully open night and day, unless it is a high wind or rain; the wind blowing through the house shakes the leaves about, and in many instances they rub the bloom of the Grapes; this ought in all cases to be avoided.

We are always anxious to get rid of the fruit as soon as we can after it is ripe, as, notwithstanding all precautions, our desperate enemy red spider will appear, and nothing can be done with it when ripe fruit is hanging in the house. As soon as the Grapes are all cut the leaves can be thoroughly syringed once in two days until every vestige of the spider is removed. The leaves should be kept healthy as long as possible, but all young growths should be pinched-off as fast as they are made. In the late houses there is little to be done except stopping-back any young growths, airing, and watering, as recommended last week.

CUCUMBER AND MELON HOUSES.

Little more has been done here, except the details given last week. The earliest house of Melons will soon be cleared of the plants, and were we called upon to supply a succession of fruit, a fresh batch of young plants would now be ready to plant-out, and would have fruit on them ready to cut in August. The houses will be filled at once with Azaleas, which are put in to make their growth and set their flower-buds for next year.

ORCHARD HOUSE.

We are now clearing away the Strawberry plants which have borne fruit; they are now being placed out of doors. If they were planted-out now an excellent crop could be gathered; but many plants that we have given away to amateurs and others in previous years have not succeeded with them, the reason was that the plants perished for lack of water at the roots. The plants were turned-out of the pots, and planted in the loose light soil common in the neighbourhood, the result being that all the water given to the plants passed down the sides of the ball of earth without wetting the centre. In all cases, when such plants are planted-out at this season, the outsides of the ball of roots should be pricked round with a pointed stick, the plants should also be placed deeper in the ground than usual, and the earth trod-in very firmly, leaving a shallow depression round the plant, so that in watering the essential element will find its way exactly where it is most required. We have done nothing to the fruit trees, except to water freely and syringe twice a-day.

CONSERVATORY AND PLANT STOVE.

Such hot weather as we have experienced the last few days has caused us to be very careful in the use of artificial heat. We will cease firing altogether if the present fine weather continues. It is necessary to shut up early in the afternoon the stove where plants are making their growth, and to maintain a moist atmosphere. The earliest-flowering plants of *Dendrobium nobile* have been removed to the early vinery where they have plenty of air night and day; after a while, if the weather is favourable, the plants will be removed out of doors against a south wall. We have also been washing *Stephanotis*, *Ixoras*, *Gardenias*, &c., where nearly bug had appeared. Where such plants as *Croton angustifolium* and others liable to the attacks of red spider had not been syringed daily this pest had appeared, and was spreading rapidly. Laying the plants on their sides and thoroughly syringing them cleared them pretty well; future attention to syringing will keep them in good health. In the conservatory many of the hardwooded plants have been removed out of doors. The house is very gay yet with Azaleas, *Calceolarias*, late *Roses* in pots, &c.

FLOWER GARDEN.

Placing sticks to Carnations and Picotees and thinning out the flower buds. We only grow a few of the hardiest sorts in the borders, the finer varieties pine away and die if planted out in our light soil. We manage them very well, three plants in a 10-inch pot. A suitable soil for them under such circumstances is good turfy loam of a clayey nature, to which is added a sixth part of rotted stable manure, and the same quantity of leaf mould well incorporated together. Hoeing the flower beds so that all weeds may be destroyed and the ground loosened, after which if no more rain fall we will give a good soaking with water. Many thanks to the raiser of those two fine Zonal Pelargoniums, Wellington and Ianthe. What a vast improvement they have made in our flower garden! The colour of both is most brilliant; the coloured drawings of Ianthe give not the least conception of the colour of the flowers. We have another very pretty margin to a small bed in two dense rows of Avalanche, white-flowered silver-variegated Zonal Pelargonium, with an edging of *Lobelia pumila*. Cutting the lawn, looking over the herbaceous border to see that no choice Alpine plants are smothered with their more dense-growing neighbours.—J. DOUGLAS.

TRADE CATALOGUE RECEIVED.

J. Van der Veldt, Florist, Wagenweg, 302, Haarlem, Holland.
—Price Current of Flower Roots and Bulbs.

TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

HORTICULTURAL SHOWS (*T. Lee*).—We can only know of them by their committees advertising them.

GRUBS IN POTTING SOIL (*Wm. A. Jan.*).—We should turn the soil over a few times before using it, and pick out all the grubs we could see, sprinkling with soot each layer of soil as turned over, using just enough soot to make the soil appear black, say to every 2 or 3-inch layer of soil a dusting of the soot. It may not destroy them, but usually drives them away, and is a good manure.

GAS TAR TO YOUNG TREE STEMS (*Idem*).—It is decidedly injurious, especially to young trees, and is a poor preventive of the attacks of rabbits. We had several Laburnums that were coated with gas tar, and all of them have died. It seems to affect trees with a smooth bark the most. Those that swell considerably in a year from the annual growth do not appear to suffer much from the gas tar. We should not repeat the application.

BURNET ROSE (*J. G.*).—The petals were all shed. As far as we can judge we see no departure from the normal form, except stunted growth.

PELAGONIUMS AND GERANIUMS (*Ignoramus*).—The difference is very small. What are commonly called Geraniums are not Geraniums at all, but Pelargoniums. There is no doubt that there is a great difference between the Storksbill and Cranesbill—they constitute two different genera; but there is no very great difference between what are commonly called the Geraniums used for bedding purposes and the Pelargoniums used for in-door flowerings. Both are Pelargoniums. Pelargonium is characterised by having usually seven stamens, and unequal-sized petals; Geranium by having ten stamens, and equal-sized petals; and Erodium, by having five fertile anthers usually. The three genera are nearly allied.

SEEDS OF PERENNIALS (*R. Muir*).—Any of the leading seedmen who advertise in our columns could either supply them out of their own stock or procure them for you.

SKELETONISING LEAVES (*An Old Subscriber*).—We know of but one book on the subject with the very attractive title of "The Phantom Bonquet." Its author is Mr. Parish, and it was published at Philadelphia. We have a copy, and it is a very beautiful little volume. You might obtain it through Messrs. Sampson, Low, & Co., Booksellers, Fleet Street.

DOUBLE PETUNIA (*Milligan & Kerr*).—We think very highly of your seedling double Petunia, so far as we can judge from the two blooms you sent us. Send a potted plant to the Floral Committee of the Royal Horticultural Society.

VINE SHOOTS DISEASED (*Inquirer*).—Had the two Vine shoots been received they would have been noticed, but we do not remember them. Send other specimens.

GLENNING FUND.—We have received 5s. from "C. L. W." and £4 from Lady Harriett Lindsay and N. A. Lindsay, Esq.

CALIFLOWERS AND BROCCOLIS DYING-OFF (*R. D.*).—The grubs at the roots of your plants are probably scabious or club root. The remedy is a difficult one. Gas lime at the rate of twelve bushels per acre is, perhaps, the best preventive, sprinkling it on the surface, and pointing it in with a fork before planting. At planting, the root-stems should be examined, and if they have an excrescence or knot on them, that should be opened with the thumb nail, and a grub will be found. The root-stems of the plants before planting should be dipped in a puddle formed of equal parts lime, soot, and cow dung brought to the consistency of mortar, thoroughly coating the roots and stems with it, and then planting. The disease is most prevalent on ground that has long been in cultivation and often cropped with the Cabbage tribe.

CYCLAMENS AFTER FLOWERING (*J. W. S.*).—Plant them out in a cold frame in light soil on an east border, and allow them to remain with abundance of air day and night, using the lights only to save the plants or soil from being drenched by heavy rains, when, though the lights are to be kept over the plants, they should be tilted at the back. Early in August take up the plants, remove from the ball the soil not occupied with roots, and repot in a size of pot that will hold the roots comfortably. Set the pots on ashes in a cold frame, admit air freely, and water so as to keep the soil moist, sprinkling the plants overhead every evening.

PROPAGATING ROSES AND CONVOLVULUS MAURITANICUS (*A. G.*).—The Roses succeed best budded on the Manetti stock. Budding may be done soon after the flowering is over. They strike freely from cuttings taken off after the flowers are shed, and inserted singly in pots in sandy soil. Place them in a cold frame, keep them close and shaded from sun, sprinkle the cuttings overhead every morning lightly, but replace the lights immediately. After they begin to grow, or in about six weeks, admit air freely, gradually at first, expose fully by the end of another six weeks, and shift them into larger pots in September. Winter them in a frame, the pots plunged in ashes, and with protection over the lights in severe weather. Convolvulus mauritanicus is increased by cuttings of the young growths inserted in sandy soil surfaced with sand, and placed in gentle heat shaded from bright sun. Rock Cistus is propagated by cuttings of the half ripened shoots put in now in sandy soil in a sheltered shady border and covered with a band-glass.

VINE BORDER MAKING (*Idem*).—The border should be well drained, and the drains should have a proper fall and outlet. The depth of the border should be 3 feet 9 inches, and the bottom should be covered with bricks, stones, &c., to the depth of 9 inches, the roughest at the bottom and the smallest at the top, and on this a layer of sods, grass side downwards. The border to be filled 9 inches higher than the intended level with a compost of turf cut 3 inches thick where the soil is a good light loam and chopped up moderately small, say in pieces 2 or 3 inches square. Use of this eight parts, old mortar rubbish from an old building one part, charcoal half part, and half part crushed bones. The whole should be well mixed. If the soil is rather strong add two parts freestone broken up as for making a road. The border should be the width of the house.

IMPROVING ASPARAGUS BEDS (*Idem*).—You would do well to sow seeds now in the beds you have planted and which are growing weakly. Sow the seed in

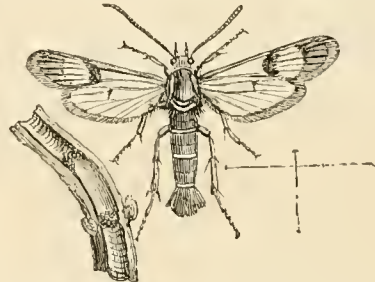
drills a foot apart, and thin out to 6 inches apart in the rows. The Maréchal Niel Rose which you have in a pot is not healthy at the roots. It succeeds much better planted out. Could you not plant it out and train the shoots near the glass? It would give more satisfaction. If you keep it in the pot, repot in turfy loam with a fourth of well-rotted manure added.

DARK CLIMBING ROSES (*Amateur, Cirencester*).—There are no really good dark climbing Roses to train on walls to match Maréchal Niel or Gloire de Dijon. Crimson Bouraault is only a summer bloomer, does not last long, and but an indifferent Rose after all. Such Roses as Général Jacqueminot, John Hopper, Madame Clemence Joigneux, and a few others of the strong-growing Hybrid Perpetuals will with care grow some height. As a pink, Blaire No. 2 is well worth growing, but it is not a second bloomer.

SHORTENING GOOSEBERRY SHOOTS (*A New Subscriber*).—The young shoots from the spurs of last year may be cut back to within two or three leaves of their base early in July. It admits light and air to the spurs, and favours their ripening.

THINNING GRAPES (*Q. Q.*).—Your Vines with from eighteen to twenty-four bunches on a 12-foot rod should not be allowed to carry more than one bunch per foot, or twelve bunches each, and to that number we should reduce them at once. If the bunches are large we should not leave more than eight bunches to each Vine. They will have a better finish than a heavier crop. Very heavy crops are seldom satisfactory.

CURRENT TREE SHOOTS WITHERING (*Nottingham*).—If you had split the shoots down their centres you would have found the pith consumed, the tube where it had been blackened, and nothing remaining but the excrements of a caterpillar, which may also be caught at his work of destruction if the examination is made so soon as the branch first shows symptoms of withering. This caterpillar is fleshy, whitish, with four yellowish brown spots near its head. It is the larva of the Currant Sphinx (*Trochilus tipuliformis* and the Sphinx tipuliformis, Sesia, or Egeria, or Bombea tipuliformis, and Bembecia tipuliformis of others). The parent moth is beautiful, and may be seen at the end of May and early in June during hot sunshine, either settled on the leaves of the Currant, or flying around the flowers of the Syringa and Lilac. It is about three-quarters of an inch across the wings when these are quite opened. The prevailing colour is bluish black, with various parts yellow; the antennae black; the breast with a yellow line on each side; the abdomen,



or lower part of the body, has three yellow rings round it in the females, and four in the males; the fore wings are barred and veined with black; it has a brush of fine scales at the end of its abdomen, which fan it can expand as it pleases. The Red, White, and Black Currant, and, we think, the Gooseberry, are all liable to its attacks. It lays its eggs at this time in openings of the bark of a young shoot, and the caterpillar immediately it is hatched penetrates to its pith, and eats its way down this until it reaches the pith of the main branch. The only security measures are to kill the moth whenever seen, and to split open the withered branches and serve the caterpillars similarly.

GARDENER'S EMPLOYMENT (*F. W.*).—We really must decline to enter into particulars on such cases; there are circumstances, appliances, and needs we know not. But we may say that we have known some such places done by the gardener and an assistant, and again by an assistant and a boy, but we have known double that amount of labour required. Besides, you gave us no sufficient data as to flower garden; we presume that is on the grass, and a thousand plants is nothing in these days. Then, where are the fruit trees? Are they contained in a quarter of an acre of a kitchen garden? If so, and if from what is left you have to find vegetables all the year round for a family of twelve persons, all we have to say is that they must be easily served. With a constant demand for vegetables we do not see how it can be done.

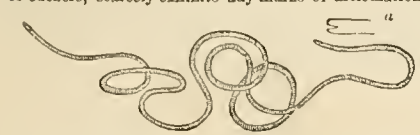
STRAWBERRIES ELIGHTED (*J. L.*).—There is little doubt but that the white floury substance on your Strawberries is mildew. The chief causes of mildew are a close atmosphere and a want of reciprocal action between the roots and the leaves and fruit. For instance, if the roots are rather dry, and the atmosphere is close, and warm, and moist, it will have a tendency to produce mildew. On the other hand, if the roots are kept extra clogged with moisture, such as a careless everyday waterer might supply them with, and more especially if the pots stood in saucers, and water was left in the saucers, and there were several dull sunless days in succession, and consequently little demand made on the leaves and fruit, there would be a tendency to a diseased dropsical condition, such as some of the fungi, and mildew among the rest, delight to flourish. As to the remedy, a slight dusting of sulphur over leaves and fruit when it first appears is the best; but that will be valueless, so far as the fruit is concerned, if not applied as soon as the first speck of the dust appears, for if delayed longer the remedy will be as bad as the disease, as the fruit will be too blighted to be fit for going to table, though it might come in as a constituent for creams, ices, &c. That is the chief mechanical remedy after the evil appears; but we have more faith in prevention in such cases than cure, and the chief preventives are great cleanliness in the houses, washing the walls with sulphur and lime, placing sulphur and lime on the heating medium, provided that is not above 160° in temperature, and giving air to the houses in good time, so that the atmosphere shall not be confined. In fact, but for the coal heap we would leave a little air on houses all night at the highest part. As soon as the warm weather sets in we uniformly do so. Even from half an inch to an inch along the top of a house all night prevents all scalding and burning, is a great bugbear to that little enemy red spider, and does much to keep off mildew by preventing that close atmosphere in which it generally delights.

BARK OF ROSE TREE EATEN (H. R. C.).—It is difficult to know what insect has injured your Rose shoots; from all appearance we should think it some large beetle. Examine the tree at night. Most probably, as the injury is somewhat local, there is harbour for the insects near.

ZONAL PELARGONIUMS (Idem).—You do not say what time you want the Zonal Pelargoniums to bloom. If in spring, select strong and healthy young plants in autumn; cut them back in September, and grow-on, giving them all the light you can in the winter. If for summer, the ordinary treatment for Geraniums will answer, being careful to pinch back strong shoots, so as not to allow the coarser shoots to take all the strength of the plants. If for autumn blooming, cut back in spring, and keep potting; as occasion may require. Let the plants grow near the glass with plenty of light and air, but slight shade from extreme sun. If we knew the especial object for which you require them we could give a much more definite answer. Avoid too many sticks and tying-out.

TWENTY-FOUR SHOW PELARGONIUMS (P.).—Black Prince, dark upper petals; lower, crimson; white eye. Emperor, dark flower; rich dark upper petals; lower, carmine with dark spot; fine. Duke of Edinburgh, crimson and maroon; black top petals. Exemplar, lower petals rose, white eye, upper petals dark. Holker, top petals dark; lower, orange maroon. Charles Turner, very bright shaded scarlet, small white eye. Heirloom, shaded dark upper petals; lower, orange rose. Congress, maroon upper, lower rose, white eye. Corsair, upper, purplish black; lower, lighter; white eye. Sultana, top petals purple; lower, rosy purple. Lilacina, lilac maroon spot; white eye. John Hoyle, orange red; fine form. Mary Hoyle, very warm soft rose; upper petals darker. Pompey, maroon top, orange lower; white eye. Basha, top, crimson and black; lower, orange crimson; Brigand, orange pink; dark spot on upper petals. Pretender, fiery crimson and black. Claubel, white, with slight spot. Woman-in-white, white upper petal, dark spot. Charlemagne, salmon pink; dark spot upper petals; William Hoyle, fine scarlet crimson; upper, black. Gold Button, white and red. Achievement, large light variety; lilac rose, upper petals maroon. Prelate, dark upper petals; lower, purple maroon.

HAIR-LIKE WORMS (Dermoth Firth).—These thread-like and intricately-twisting worms occur abundantly after rains following hot weather. They are the *Gordius aquaticus*. It belongs, like the leech, to the class Suctorio, or suckers, scarcely exhibits any marks of articulation on its body, and has



no distinct respiratory organs. Its colour is pale brown, and being found in such a twisted form, as already noticed, suggested its name after the inventor of the Gordian knot.

The mouth is a simple pore at the fore extremity of the body, which is conical; but the tail being forked, as represented at *a*, has often been mistaken for its mouth. Its habits are little known, but we are inclined to think it one of the friends of the gardener, for two parties observed one escape lately from the body of a beetle, which they found writhing on the ground.

PEAS SOWN NORTH AND SOUTH, OR EAST AND WEST (S. C.).—We have not noticed any difference in the earliness of the crops, but we find that the Peas grow most to the sun side of rows sown east and west, and on that side the pods are fit to gather sooner, and are more numerous on the south than north side of the row. Sown with the ends north and south the haulm is equally disposed on both sides, and there is no perceptible difference in the earliness, quality, or quantity of the produce. On this account we prefer the rows pointing north and south. There is, however, no great difference; and for the very reason you assign we sow them, except on sheltered borders, with ends east and west, convinced that they are more secure against east and west winds.

MIGNONETTE FAILING (Unsuccessful).—We have no knowledge of the small black insects that attack the Mignonette; but we apprehend they are, as you employed ducks last year and soot this season, slugs, the small black sort which as you say are very destructive. We should give the ground a good dressing of quicklime and point it in with a fork, or if you have any plants left we should sprinkle it on the surface, and after rain when they will be near the surface, and best in the evening. If no plants are left give a good liming now, and again before sowing next year, pointing it in each time with a fork. When the plants appear dust them occasionally with lime, especially in moist weather. You should have abundance another season.

POTATOES DISEASED.—I send you a top of American Early Rose. About five per cent. of the plants are thus affected. In a few days the tops die down to the ground. I have seen half a dozen similar cases in Suffolk and Cambridgeshire, and in every instance only the American Early Rose are thus affected.—ST. EDMUND.

[The leaves are very severely ulcerated, and we fear you will find the tubers similarly decayed. We cannot assign a cause any more than we can for the genuine "Potato murrain," of which we incline to think your Potatoes are suffering; but if so, it is a very early development. Examine the tubers of some of the plants, and inform us if they are ulcerated. If not, then we think your Potatoes are attacked by the "curl."]

VINES UNPRODUCTIVE (R. R. S.).—We have won excellent crops from a similar soil and subsoil. You had better have been content with the 18 inches of surface soil, and not have excavated the chalk subsoil. Manure the surface to the depth of 9 inches, mulch the surface, and water once a-week with weak liquid manure. Cut off all the yellow-leaved terminations of the laterals. Next year you will have Grapes.

WOODlice IN MUSHROOM BED (J. C. H.).—If you can get at the walls and without wetting the bed much, place a little hay all round at the foot of the wall next the bed, and pour boiling water down the walls and on the hay. It will kill all it touches, and also all the Mushrooms it comes into contact with; therefore avoid pouring it on the bed. If that be impracticable, boil some potatoes, wrap them in a little hay loosely, and place at the bottom of small flower-pots and lay them on their sides, which examine every day, and shake out the vermin into a bucket of boiling water.

NAMES OF PLANTS (G. A.).—We cannot identify plants from leaves only (*Peter*).—We cannot name florists' varieties; it is one of their Pyrethrums. (*A. G.*)—1, *Pyrus Aria*; 2, *Siphocampylus* sp., perhaps *S. longipedunculatus*, *Pohl*; 3, we do not recognise. (*W.*)—The Orchid was too far gone when we received it. (*J. C.*)—2, *Oncidium japonicum*; 3 and 4, *Blechnum occidentale*; 5, *Dicksonia dallwhoides*; 6, *Asplenium flaccidum*; 7, *Doodia*, probably *aspera*; 8, *Goniophlebium appendiculatum*. (*M. R.*)—1, *Aspidium acrostichoides*; 2, Indeterminable; 3, *Asplenium lucidum*. (*E. C. L.*)—1, *Sedum*

anglicum; 4, *S. anglicum* var. (?); 2, *S. rupestre*; 6, *S. sp.*; 3, *Saxifraga elatior*; 5, *Aizoon*. (*I. F.*)—*Escallonia* sp. (*W. G. C.*)—1, *Kerria japonica*; 2, *Pyrus* sp.; 3, *Ruscus aculeatus*; 4 and 5, leaves only; 6, *Euonymus europaeus*. (*T. B. W.*)—1, Apparently a *Geum*; 2, *Hemerocallis flava*. (*C. H.*)—We believe, but cannot be certain, that it is that most enduring of Ferns for a plant case, *Pteris serrulata*.

POULTRY, BEE, AND PIGEON CHRONICLE.

EXHIBITING SINGLE BIRDS.

In your Journal of May 22nd, "IMPARTIAL" advocates the single-bird system, and in his letter of the 12th inst., upon the limiting system, he says that he is somewhat disappointed in not seeing any further remarks upon the subject.

Halifax was both father and mother of the single-bird system, as at that town was held the first exhibition where the birds in the whole of the classes were shown singly. In 1860, thirteen years ago, Halifax held its third exhibition, and issued a prize list with forty classes, birds to be shown singly, there being separate classes for cocks and separate classes for hens; the total number of entries was 504. Carriers headed the list with 53 entries; Pouters had 75 entries; Almond Tumblers, 25; Jacobins, 30; Turbits, 32; Barbs, 29; Owls, 45; Fantails, 45; Dragoons, 25; and Trumpeters, 20. Such entries as these will give some idea of the result of the single-bird system. This was in the days of Peter Eden, of Salford, who exhibited twenty-six pens and obtained six first and two second prizes, ten high commendations, and three commendations. There was a sweepstakes for Pouters, which was won by Peter Eden. There were also extra prizes in the Almond classes, in addition to the class prizes. The first and extra prizes for Almond cocks was carried off by Mr. Esquilant, of London. The first honours and extra prize for Almond hens were won by Mr. Harry Wandle "fra cannie Newcassel." The Judges were Mr. Harrison Weir and Mr. P. H. Jones.

The following year Halifax held its fourth and last exhibition. Why this exhibition was allowed to fall to the ground I have never been able to ascertain.

From that time I never saw or heard of an exhibition upon the single-bird system until Bedlington tried it in 1871; then Durham, Birmingham, and Newcastle-upon-Tyne tried it, and all found it a success. The last-named town had a success such as I should say was never before known. Now, I am glad to see that at many other shows the same principle is adopted, and I advise those who have not yet done so to try it, and they will be sure of success. I quite agree with "IMPARTIAL" upon the single-bird system, but shall always set my foot upon any principle of limiting the prices of birds for exhibition, as there ought not to be any difference made between the dealer and the amateur.—TINESIDE.

HANTS AND BERKS AGRICULTURAL SOCIETY'S POULTRY SHOW.

"Rolling stones gather no moss," so says the proverb; but it is not true of shows. That of which we write would have died of *ennui* had it remained at home; but it went out to seek its fortune, and found it. Now, like a beauty conscious of having deserved the admiration that follows her, it skips from town to town, basks in the patronage of Royalty, is honoured by municipalities, opened in state by sound of trumpet, and rejoices in a goodly balance.

Instead of an ordinary field, with here and there a tent, now and then a post to which a quadruped was tied, and sundry common hurdles containing here sheep and there pigs, commodious substantial pens cover fifteen acres. All things are to be had—carriages of every description, so light they would almost go alone; a child could draw one if it liked. A small machine, price 1s. 6d., with which the salesman said he would undertake to spoil the best knife in the company; he would rub it edge downwards till it was as round as a ruler. Would a gentleman lend him one? The public did not seem anxious, but a boy lent him one, and when he was asked to feel it he certainly looked glum. Then it was rubbed two or three times, and it certainly became sharp as a razor. Washing machines, printing machines, sewing machines; every application of steam; electric telegraph brought on to the ground; shepherd's houses made of galvanised iron; cooking apparatus which did so much with sixpennyworth of wood, that the fortunate purchaser of one of them became as indifferent to the price of coals as farmers' boys are to the increase or decrease of income tax; portable machines so certain in their execution, that but for the ill-temper of the insurance offices who would, perhaps, refuse to pay damages, you might play at setting your house on fire, and stop it at will. Sutton's seed establishment was an exhibition of itself. These well-settled shows have drawn all trades round them, and remind us, though on a smaller scale, of some of the continental fairs. Vendors of all things seem to find their ac-

count in coming, and it is hard to encounter a sudden want that will not immediately be remedied for a consideration. The grand stand used at the races was here utilised, and a payment of 6d. enabled visitors to go where the country was seen like a panorama, and where the view was really charming. The excellent military band was discoursing sweet music; in close neighbourhood there was shelter from the sun; refreshments at moderate price, and a *coup d'œil* such as is seldom enjoyed.

The spot was admirably chosen on what is called "The Common," but which is such scenery as we meet with in the ancient chases, or read of as the glades in which Robin Hood and his foresters caroused. The magnificent timber is worthy of any foreign landscape, affording shade and shelter in all directions, and reminding one of spots where the knight of the rueful countenance and his Sancho rested from their exploits. All this tract, and it is large, was occupied. Beer shops, toy and cake stalls, hot and cold provisions, dancing-booths, sparring-tents—all paraded their attractions. Luxurious swings were improvised on the strong limbs of the huge oaks; and as we looked we could not help asking ourselves whether, in the days of Sir Bevis and his fellow knight, men had not swung from the boughs less to their satisfaction. Pic-nicing seemed in many parts the order of the day, and Watteau-like groups were lying on the grass; but as evening and dusk came on there were men and women collected round fires, who looked more like a work of *Salvator Rosa*. It was a truly pleasant meeting.

The Show was opened by the Corporation of Southampton. Many well-appointed carriages containing or carrying Macebearers, the Mayor, red-robed Aldermen, Town-Councillors in their sober-coloured gowns; these were preceded by police and a military band. Judging from appearances, the appointment as Mace-bearer is conducive to longevity, and none attain to eminence in the Council till they reach a certain age.

Dorkings are always, or should be always, numerous at an agricultural meeting. There were here fourteen pens of good birds. The *Cochins* presented an extraordinary feature, inasmuch as in a class for all colours the first was taken by the Whites. The *Game* are always good at this Show, and the present was no exception. *Polands* were good, but not numerous, and we think the Committee will be wise if they reduce the number of classes. The *Spanish* were well represented in numbers and quality. It is here as elsewhere with *Hamburgs*, they do not improve. The *Light Brahmas* formed one of the best classes in the Show, and produced wonderful birds. We cannot say as much for the *Dark* class; they were neither as numerous nor as good as usual. *Game Bantams* were very good, and with a class for Any other variety of Bantam, formed a considerable entry. There were many excellent birds; but we must say to owners of *Game Bantams*, they must show them in their proper class, as they are only disqualified if they are shown as varieties. The next is a rising class at every show—we allude to *French* fowls. There were three prizes to award, and more might have been worthily bestowed. The next was a large class for Varieties; there were good Malays, Andalusians, and Black Hamburgs.

There were some good *Aylesbury* and *Rouen Ducks*, and in the Various class was shown a pair of very tame *Shovellers* in beautiful condition. Although not very scarce birds, yet those only who have kept them can speak of the difficulty of keeping them in condition. *Turkeys* and *Geese* were good, but not numerous.

The *Pigeons* formed a good and most attractive class. Carriers and Fantails were very good. The Trumpeters were good, but not up to the new standard; it was worthy of note, none but black birds were shown. The *Homing Pigeons* were a new and interesting class. Eleven pens competed, and we shall be curious to learn the result of their flight. The various *Pigeons* and *Rabbits* closed this enjoyable and successful Show. Mr. Downes was, as usual, urbane, energetic, and ubiquitous.

DORKINGS.—1, E. Hooper, Calne. 2, T. C. Burnell, Micheldever. 3, O. E. Cresswell, Early Wood, Bagshot. *hc*, G. F. Hodson, North Petherton, Bridgewater; Lieut.-Col. H. B. Lane, Bracknell. *c*, G. Meares, Thorahill, Bitterne; Miss J. Milward, Newson St. Loo, Bristol.

COCHINS.—1, R. S. Woodgate, Pembury, Tonbridge Wells. 2, Miss J. Milward. 3, Mrs. J. Simmonds, Arbroath. *hc*, E. De La Simmonds, Winchester. *c*, J. Chisman, Rowhams, Southampton.

GAME.—*Black-breasted and other Reds*.—1, W. H. Stagg, Netheravon. 2, C. H. Ames, Hinton-Thames. *c*, H. E. Martin, Southborne, Fakenham. *Any other variety*.—1, Capt. C. F. Terry, Walton-on-Thames. 2, F. Warren, Southampton. *hc*, Miss M. Blackmore, Alresford.

POLANDS.—*Golden*.—1, T. P. Edwards, Lyndhurst. *Silver*.—1, J. L. Hinton, Warmminster. 2, T. P. Edwards. *Black with White Crests*.—1 and 2, T. P. Edwards.

SPANISH.—1, R. S. Samways, Southampton. 2, J. Watts, King's Heath, Birmingham. *c*, K. S. Samways, Southampton; F. James, Packham Eye.

HAMBURG.—*Gold-pencilled*.—1, O. E. Cresswell. *Silver-pencilled*.—1, H. Feast, Swansea. 2, F. W. Arnold, Newport, Isle of Wight.

HAMBROUS.—*Gold-spangled*.—1, Miss C. E. Palmer, Odiham. 2, G. Cull, Ringwood. *Silver-spangled*.—1, H. Feast, Swansea. 2, T. Chamberlain, Windsor. *hc*, J. Messer, Reading.

BRUMA POCTRA.—*Light*.—1 and 2, Mrs. T. Turner, Avon, Ringwood. 3, J. Pares, Postford, Guildford. *hc*, Rev. N. J. Ridley, Newbury; Mrs. T. Turner; H. M. Maynard, Holmwood, Eyde, Isle of Wight. *Dark*.—1, J. Chisman, Rowhams, Southampton. 2, Lieut.-Col. H. B. Lane, Bracknell. 3, Horace Lingwood, Creeting, Needham Market.

BANTAMS.—*Game*.—1, R. Donger, Jun., Parkstone, Poole. 2, T. W. Anns, Clapham. *hc*, R. S. Samways, Southampton; O. Nicholson, Portsmouth. *Any*

other variety.—1 and 2, G. F. Hodson, North Petherton, Bridgewater. *hc*, J. Pares; J. Watts; Mrs. E. St. John, Basingstoke.

FRENCH.—*Crève-Cœur*, *La Flèche*, or *Houdans*.—1, W. Dring, Faversham. 2, J. Chisman. 3, H. Feast. *hc*, Rev. N. J. Ridley; J. K. Fowler. *c*, W. Dring; H. Feast.

ANY OTHER VARIETY.—1, J. L. Hinton, Warmminster (Malays). 2, — Wildey, Cosham (Andalusians). 3, H. Feast. *hc*, A. Alderton, Hiersham, Walton-on-Thames.

ROUEN.—1, J. K. Fowler, Aylesbury. 2, J. Pares. *Aylesbury*.—1, J. K. Fowler. 2, H. D. Hoare, Brownton, Bitterne, Southampton. *Any other variety*.—1, R. Wilkinson, Guildford (Shovelers). 2, R. F. Soffe, Hams, Eastleigh, Southampton (Mascovs).

GEES.—1, J. K. Fowler. 2, A. White, Greywell, Odiham.

TURKEYS.—1, Rev. N. J. Ridley, Newbury. 2, M. Kew, Market Overton, Rutland.

PIGEONS.

CARRIERS.—1, H. M. Maynard. 2, E. S. Carew-Gibson, Ryde, Isle of Wight.

TUMBLERS.—1, H. Yardley, Birmingham. 2, E. S. Carew-Gibson.

FANTAILS.—1, H. M. Maynard. 2, J. F. Loveridge, Newark. *hc*, J. D. Blackman, Southampton.

TRUMPETERS.—1, G. Packham, Exeter. 2, C. Norman, Westerfield, Ipswich. *hc*, H. Yardley.

MAPIES.—1, A. P. Maurice, Herriard Grange. 2, H. Yardley.

HOMING.—1, J. D. Blackman, Southampton. 2, J. W. Barker, Reading. 3, C. H. Buckland, Reading.

ANY OTHER VARIETY.—2, G. Packham. *hc*, H. M. Maynard; C. H. Buckland (Black Dragons).

RABBITS.

LONGEST EARS.—1 and 2, F. Banks, London. *hc*, C. Palmer, Southampton.

FOREIGN.—1, J. Ellis, Reigate. 2, E. S. Carew-Gibson. *hc*, T. P. Broad, Brighton. *c*, Palmer, Southampton. *c*, Master F. A. Wallis, Coombehurst, Basingstoke. *c*, Palmer.

FOR VARIETY.—To include all Points. —1, J. Ellis, Reigate. 2, F. Banks.

JUDGE.—Mr. John Bailey, 113, Mount Street, Grosvenor Square, London.

THORNE POULTRY SHOW.

This was held on the 18th inst. in the Park of Mr. Durham, of Thorne Hall, and as will be seen by the following statement of the entries in the present as compared with the past year, there was a very marked increase in the number of entries—almost double in the poultry classes, and no falling-off in those of Pigeons and Rabbits, the numbers being—

	1872.	1873.
Poultry	165	276
Pigeons	130	120
Rabbits	72	75

The following is the prize list:—

DORKINGS.—Cock.—1, J. White, Warley. 2, Mrs. Arkwright. 3, T. Whiting. *hc*, W. Roe; J. Robinson, Garstang. *Hen*.—1, E. W. Richardson. 2, W. H. King. 3, O. E. Cresswell, Early Wood. *hc*, W. Roe; J. White; J. Robinson; J. Watts, King's Heath.

SPANISH.—Cock.—1, J. Powell, Bradford. 2, J. Leeming, Broughton. 3, R. Newbitt, Epworth. *hc*, J. Boulton, Bristol; E. Brown, Sheffield; R. Newbitt. *Hen*.—Capt. J. Powell. 2, J. Leeming. 3, R. Smith, jun., Norton, *hc*, J. Boulton; E. Brown; J. Thresh, Bradford.

COCHINS.—*Cinnamon or Buff*.—Cock.—1, D. & J. Ibbotson, Whitby. 2, W. J. Pearce, Brifield. 3, H. E. & J. Mason, Drighlington. *Hen*.—1, W. Mitchell. 2, T. F. Ansell, St. Helen's. 3, H. Tomlinson, Birmingham. *hc*, J. Watts; G. Speedy.

COCHINS.—*Any other variety*.—Cock.—1, W. Whiteley, Clough. 2, A. Bamford, Middleton (Partridge). 3, H. L. Sandpers, Apperley (White). *Hen*.—1, Rev. R. Story, Wensley. 2, A. Darby (Black). 3, R. S. S. Woodgate, Pembury (White).

ROUEN.—*Dark or Light*.—Cock.—Capt. and 2, J. F. Ansell. 3, W. Swann, Redington. *hc*, Mrs. Arkwright; W. R. Garner, Dyke Bourn. *Hen*.—1 and 2, J. F. Ansell. 3, Dr. Holmes. *hc*, J. T. Smith; W. Swann.

GAME.—*Black Red*.—Cock.—1 and 3, C. Chaloner, Whitwell. 2, W. Tell, Adwalton. *Hen*.—1, C. Chaloner. 2, J. Mason, Worcester. 3, Sales & Bentley, Crowle.

GAME.—*Brown Red*.—Cock.—1, W. Perrin, Nantwich. 2, C. Chaloner. 3, Sales & Bentley. *hc*, W. Perrin. 2, Sales & Bentley. 3, C. Chaloner. *hc*, H. Butler; G. W. Bricey, *c*, G. W. Bricey.

GAME.—*Duckwing or other Grey or Blue*.—Cock.—1, Sales & Bentley. 2, C. Chaloner. 3, J. Mason. *Hen*.—1, C. Travis, Thurgoland. 2, T. Dyson, Ilkfield. 3, Sales & Bentley.

GAME.—*White, Pile, or any other variety*.—Cock.—Capt. and 2, R. Walker, Gomersal (Pile). 3, J. C. Coape (Pile). *hc*, Sales & Bentley. *c*, C. W. Bricey. *Hen*.—1, Sales & Bentley. 2, R. Walker (Pile). 3, H. E. & W. J. Mason (Pile).

HAMBROUS.—*Gold or Silver-spangled*.—Cock.—1 and 2, J. Robinson. *Hen*.—1 and 2, J. Robinson.

HAMBROUS.—*Gold or Silver-pencilled*.—Cock.—1 and 3, J. Robinson. 2, Rev. G. Skipworth, Oakham. *Hen*.—1 and 2, J. Robinson.

FRENCH.—Cock.—1, Mrs. B. Frank. 2, Mrs. Cross, Appleby. 3, H. Feast, Swansea. *hc*, G. W. Hilbert, Godley, Hyde. *c*, J. H. Fielden, Tadmorden.

ANY OTHER VARIETY.—Cock.—1, W. E. Patrick, West Winch (Poland). 2, J. S. Booth, Chesterfield (Malay). 3, J. Robinson. *Hen*.—1, W. R. Pstrick (Poland). 2, J. Robinson.

GAME BANTAMS.—*Black Red*.—Cock.—1 and 3, W. F. Addie, Preston. 2, F. Steel, Halifax. *hc*, W. F. Entwistle, Westfield; W. Adams, Beverley; F. Steel; S. Smith, Northorham. *Hen*.—1, E. Newbitt. 2, W. F. Addie. 3, W. F. Entwistle. *hc*, W. Adams; E. Newbitt; J. & G. Tonge. *c*, S. Smith.

GAME BANTAMS.—*Any other variety*.—Cock.—1 and 2, F. Steel (Pile and Duckwing). 3, S. B. Boulton, Farnfield. *hc*, W. Adams; C. Chaloner; E. Newbitt. *c*, W. F. Entwistle (Pile). *Hen*.—1, W. F. Entwistle (Pile). 2, W. F. Addie (Duckwing). 3, F. Steel (Duckwing). *hc*, W. Adams; E. Newbitt; F. Steel (Duckwing); S. Beighton.

BANTAMS.—*Any variety not Game*.—Cock.—1, J. Waddington, Guiseley. 2, H. B. Smith, Brooklands. 3, Mrs. R. Frew. *hc*, J. Watts; R. H. Ashton, Mottram. *c*, Mrs. Cross; J. Karushaw, Rotherham. *Hen*.—1, H. B. Smith. 2, J. Waddington. 3, S. Smith. *hc*, K. Frew; R. H. Ashton. *c*, G. Simpson (Golden Seabright).

DUCKS.—*Aylesbury or Rouen*.—1, J. Robinson (Aylesbury). 2, J. Rotwell (Aylesbury). *Any other variety*.—1 and 3, H. B. Smith. 2 and *hc*, W. M. Ems, Pindsey.

GEES.—1, J. B. Hepworth. 2, C. Hayeroff, Thorne.

TWO GINS.—1, C. Hayeroff. 2, J. Stables, Sonta Duffield. 3 and *hc*, Mrs. J. Furniss, Crowle Wharf.

SELLING CLASS.—1, J. Powell. 2, R. W. Richardson. 3, J. Leeming. *hc*, W. Wing, Sharrow Vale (Spanish); J. Johnson, Newark (Buff Cochins); W. Swann (Black Spanish). *c*, J. Robinson.

PIGEONS.

CARRIERS.—Cock.—1 and 3, E. Horner, Harewood. 2, H. Yardley, Birmingham. *Hen*.—1 and 2, E. Horner.

POULTERS.—*Cock*.—1 and 3, E. Horner. 2, R. Ashton, Huntingdon. *hc*, J. Kilpatrick, Whitby; A. Spencer, Driffield. *Hen*.—1 and *hc*, E. Horner. 2, L. Watkin. 3, H. Yardley.
TUMBLERS.—1, W. Adams. 2, E. Horner. 3, H. Yardley. *hc*, W. Adams; E. Horner (2).
JACOBS.—1, E. Horner. 2, O. E. Cresswell. 3, J. H. Watkins. *hc*, R. G. Saunders, Leven, Beverley.
NUNS.—1 and 2, E. Horner. 3, J. Watts.
TRUMPETERS.—1 and 2, E. Horner. 3, C. N. Lythe, Cottingham.
TURBITS.—1 and 3, C. N. Lythe. 2, J. Watts. *hc*, E. Horner; J. E. Crofts (2).
FANTAILS.—1, J. F. Lovesidge, Newark. 2 and *hc*, J. Walker, Newark. 3, E. Horner.
JACOBS.—1 and 2, E. Horner. 3, J. Kilpatrick. *hc*, H. Yardley; C. G. Cave, Spalding.
DRAGONS.—1, T. Chambers, jun., Northampton. 2, Croots & Packham. 3, E. Horner. *hc*, C. N. Lythe.
ANTWEAPS.—1, E. Horner. 2, J. Crossland. 3, H. Yardley. *hc*, Mrs. Arkwright.
MAGPIES.—1, E. Horner. 2, J. Kilpatrick. 3, Miss J. M. Frew. *hc*, C. N. Lythe; J. E. Crofts.
ANY OTHER VARIETY.—1, C. Dennison, Halifax (Foreign Owl). 2, H. Yardley. 3, E. Horner. *hc*, W. H. Lee, Nantwich (Owl); E. Horner; J. E. Crofts; J. Thresh.
SELLING CLASS.—1, C. G. Cave (Barb). 2, T. Chamber, jun. (Carrier). 3, R. W. Richardson (Pouter). *hc*, L. Watkin (White Pouter); W. Nottage, Northampton (Black Barb); J. E. Crofts.

RABITTS.

LOP-EARED.—*All Properties.*—*Buck*.—1, F. Banks, London. 2, W. Boden, West Hartlepool. 3, Shaw & Allison, Sheffield. *hc*, A. H. Easton, Hull. *c*, J. Quick, London; J. Loveband, London. *Do.*—1, A. H. Easton. 2, F. Banks. 3, C. King, London. *hc*, Shaw & Allison. *c*, W. Boden; A. H. Easton; J. Quick; F. Loveband; S. G. Hudson, Hull.
ANGORA.—1, W. Whitworth, jun., Lonsight. 2, C. Auton, York. 3 and *hc*, G. C. Hinton, Bradford. *c*, A. H. Easton.
HIMALAYAN.—1, S. G. Hudson. 2, G. C. Hutton. 3 and *hc*, S. Ball, Bradford. *c*, J. Hallas, Huddersfield; G. Bowler; S. M. Peace; F. Sabbage, Northampton.
SILVER-GREY.—1 and *hc*, S. Ball. 2, A. H. Easton. 3, R. H. Grew, Wakefield. *c*, R. D. Dawson, jun.; J. H. Brand, Barton-on-Umber.
CRUTCH.—1, W. Whitworth, jun. 2, F. Banks. 3, F. Sabbage. *hc*, S. Ball. *c*, F. Banks; S. G. Hudson.
ANY OTHER VARIETY.—1, W. Whitworth, jun. (Belgian). 2, C. King (Belgian).
SELLING CLASS.—1, T. Wood, York (Lop-eared). 2, C. King. 3, J. Quick (Lop-eared). *hc*, A. H. Easton (Lop-eared). *c*, J. G. A. Hillyard, York (Lop); S. G. Hudson (Silver-Grey); C. Auton.

JUDGES.—*Poultry*: Mr. R. Teebay, Fulwood, Preston. *Pigeons*: Mr. T. J. Charlton, 23, Blenheim Road, Manningham, Bradford. *Rabbits*: Mr. C. Rayson, Ivy Lodge, Didsbury, Manchester.

BURTON-ON-TRENT POULTRY SHOW.

THE second annual Exhibition held in connection with the Flower Show, took place on Wednesday the 18th inst. This being in the midst of the breeding season, the entries were not so numerous as the prize list led the Committee to expect. However, some good birds were exhibited, especially the first-prize birds in the Clear Yellow and Buff Norwich classes. In the Silver Lizard class a bird exhibited by Mr. Bunting, of Derby, was disqualified, being deficient in tail feathers; upon examination it was found that a white feather had been cut out, the stump remaining, and two feathers besides were missing. There was a general opinion expressed that it would be highly desirable to hold the exhibition of Canaries at the August Flower Show, as the alteration in the time would give breeders a better opportunity of sending their birds.

DORINGS.—*Coloured or Silver-Grey*.—1, J. White, Warlaby, Northallerton. 2, W. Harvey, Sheffield.
SPANISH.—1 and *hc*, H. F. Cooper, Walsall. 2, Burch & Boulter, Sheffield. *c*, J. Cooper, Hanley.
COCHINS.—1, T. F. Ansell, Cowley Mount, St. Helen's. 2, H. Tomlinson, Birmingham. *hc*, Rev. R. L. Story, Wensley, Bedale; W. Harvey; W. Jones, Walsall.
BRAMA-POUTRA.—*Dark*.—1, T. F. Ansell. 2, W. Whiteley, Clough, Sheffield. *hc*, W. H. Crewe, Etwell; J. Watts, Birmingham. *Light*.—1, Miss M. E. Eyton, Wellington, Salop. 2, C. Graves, Boythorpe, Chesterfield.
POLISH.—1, W. Harvey. 2, W. Jones. *hc*, H. Feast, Swansea.
FRENCH.—1, G. W. Hibbert, Godley, Manchester. 2, H. Feast.
GAME.—*Black or Brown-breasted Reds*.—1, R. Ashley, Nantwich, Cheshire. 2, E. Bell, Burton-on-Trent. *hc*, E. Clavey, Burton-on-Trent. *Any other variety*.—1, R. Ashley. 2, J. Hood, Tatenhill, Burton-on-Trent.
HAMPSHIRE.—*Gold or Silver-spangled*.—1, J. Robinson, Garstang, Manchester. 2, W. Driver, Keighley. *hc*, S. W. Hallam, Whitwick, Leicester. *Golden, or Silver-pencilled*.—1, W. Driver. 2, W. Speakman, Doddington Park, Nantwich. *hc*, E. Bell.
ANY OTHER VARIETY.—1, J. Robinson (Black Hamburgs). 2, C. J. Winney, Stapenhill.

BANTAMS.—1, E. Bell. 2, R. Ashley. *hc*, W. T. Eversard.
DUCKS.—*Roan*.—1 and 2, E. Kendrick, Lichfield. *White Aylesbury*.—1, E. Kendrick. 2, W. H. Crewe.
TURKEYS.—1, E. Kendrick. 2, T. Belsaid, Burton.

PIGEONS.

CARRIERS.—1 and 2, H. Yardley. *Extra* 2, J. Peace, Burton-on-Trent.
POULTERS.—1, W. Harvey. 2, H. Yardley.
TUMBLERS.—1, J. Peace. 2, W. Harvey. *hc*, H. Yardley.
DRAGONS.—1, H. Yardley. 2, J. Peace.
ANTWEAPS.—1 and 2, H. Yardley.
ANY OTHER VARIETY.—1, J. Peace. 2, W. Harvey.

CAGE BIRDS.

NORWICH.—*Clear Yellow*.—1, Lamplough & Bexson, Derby. 2, C. Pratt, Walsall, Burton-on-Trent. *Clear Buff*.—1, Bunting & Hodgkinson, Derby. 2, E. Hyde, Melbourne. *hc*, T. Bates, Burton-on-Trent.
NORWICH.—*Marked Yellow*.—1, Curtis & Mann, Burton-on-Trent. 2, Bunting & Hodgkinson. *Marked Buff*.—1, Bunting & Hodgkinson. 2, A. Upton, Derby.
NORWICH.—*Even-marked or Variegated Buff*.—1, R. Heath, Burton-on-Trent. 2, A. F. Parker, Burton-on-Trent.
CRESTED NORWICH.—*Yellow or Buff*.—1, Lamplough and Bexson. 2, J. Goode, Braunstone Gate, Leicester.
GREEN NORWICH.—*Yellow or Buff*.—1, T. Newbold, Burton.
BELGIANS.—*Clear or Marked Yellow*.—1, T. Cockerton, Ulverston. 2, T. Newbold. *Clear or Marked Buff*.—1 and 2, R. Heath.
LIZARDS.—*Golden-spangled*.—1, Bunting & Hodgkinson. 2, W. Jackson, Burton-on-Trent. *Silver-spangled*.—1, J. Goode.

GOLDFINCHES.—1, Bunting and Hodgkinson. 2, T. Cockerton, Ulverston. *hc*, Curtis & Mann.
PARROT.—1, J. Harris, Lichfield. 2, T. Pegg, Burton. *hc*, G. Webster.
JUDGES.—*Poultry*: Mr. W. J. Drewry; Mr. A. O. Worthington; Mr. E. Lowe. *Canaries*: Messrs. Bemrose & Orme, Derby.

BELFAST POULTRY SHOW.

THIS Show was held on the 19th and 20th inst., and is in connection with the North-East (Ireland) Agricultural Association. A challenge cup value £10 (to be won three times in succession by the same exhibitor), having been twice gained by Mr. Mulligan, that gentleman seemed to have made great efforts to secure the coveted prize, and the result was that it was won with eighty-three points against sixteen of the next on the list. The entries were not so large as at the last Show, which was, no doubt, on account of the challenge cups being given for points; and it is our opinion that if three cups of three guineas each were offered, the result would be much more satisfactory to all concerned, and also in point of entries to the treasury of the Society. The quality of the winners was mostly good, but there were some poor specimens shown.

Dorkings were a fair class, the first Dark and the second Silver-Greys; but in chickens of this year only the first-prize pair were noteworthy, and these were Silver-Greys. Beth old and young *Spanish* were very good, the chickens being particularly promising; and the *Cochins* and *Brahmas* also of fair quality, but failing in plumage. Only two birds in the Spangled Hamburg classes were fit for the show pen, these being the Silver cock and hen in the first-prize pen; but in both classes of Pencils the first-prize birds were good and in nice plumage. In *Game Brown Reds* were first and *Duckwings* second, and in *Bantams Black Reds* and *Piles* won respectively. There were three classes for *Polands* but only one entry, which were White-crested Blacks. *Turkeys* and *Geese* were large and good in both classes; and in all the four classes of *Ducks* there were some excellent birds shown, although there was only one pen of Rouen ducklings.

The birds were placed in excellent pens in permanent sheds, the arrangements being good and the fowls well attended to.

DORINGS.—1, W. G. Mulligan, Springfield. 2 and *c*, G. Martin, Glenview, Castlereach. 3, W. Charley, Seymour Hill, Dunmurry. *Chickens*.—1, W. G. Mulligan. 2 and 3, G. Martin. *Chickens suitable for the Table*.—1, G. Martin.
SPANISH.—*Cup*.—1 and 2, W. G. Mulligan. 2, J. Follock, Dunderland. *c*, S. W. McBride, Lurgan. *Chickens*.—1 and 2, W. G. Mulligan. 3, J. Follock.
COCHIN-CHINA.—1 and 2, W. G. Mulligan. 3, R. Long, Belfast. *hc*, F. Robertson, Oldpark, Belfast. *c*, J. S. Brown, Edenderry, Belfast.
BRAMA-POUTRA.—*Cup*.—1 and 2, W. G. Mulligan. 3, W. Gregg, Willowbank, Belfast. *hc*, S. W. McBride; R. Long.
SCOTCH-GREYS.—1 and 2, W. G. Mulligan. 3, R. Long.
HAMBURGERS.—*Silver-spangled*.—*Medal*. 1 and 2, W. J. Davison, Belmont, Belfast. *Silver-pencilled*.—1, W. G. Mulligan. *Golden-spangled*.—1 and 2, W. J. Davison. *Golden-pencilled*.—1, W. G. Mulligan. 2, H. Fleming, Whitehouse, Belfast. 3, C. E. McClinton, Glendarragh, Cramlin.
GAME.—1, *Medal*. and 2, W. G. Mulligan. 3, C. E. McClinton.
BANTAMS.—1 and 2, W. G. Mulligan.
POLISH.—*White-crested Black*.—1, W. G. Mulligan.
TURKEYS.—1, G. Martin. 2, J. McCormick, Newtonbrea. 3, W. Mullan, Willowfield, Belfast. *hc*, Marquis of Downshire, Hillsborough; J. Dickey, Kilroot, Carrickfergus.
GESE.—1, W. G. Mulligan. 2, Marquis of Downshire. 3, W. Mullan.
DUCKS.—*Aylesbury*.—1 and 2, W. G. Mulligan. 3, W. Charley, Dunmurry.
ROUEN.—1, 2 and 3, W. G. Mulligan.
DUCKLINGS.—*Aylesbury*.—1 and 2, W. G. Mulligan. *Rouen*.—*Medal*. G. Martin.
The Judges were Messrs. J. Dixon, Bradford; A. Paterson, Airdrie; and E. Hutton, Leeds.

YORKSHIRE GALA BIRD SHOW.

IN connection with the horticultural show, reported in another column, there was a bird show, at which Mr. Barnesby, of Derby, and Mr. Clark, of Scarborough, officiating as Judges, made the following awards:—

NORWICH.—*Clear Yellow*.—1, Martin & Griffin, Northampton. 2.—Calvert, York. 3, Quinn & Son, York. *Clear Buff*.—1, J. & G. Mackley, Norwich. 2, Quinn & Son. 3, Martin & Griffin. *Even-marked Yellow*.—2.—Thompson, York. 3, J. & G. Mackley. *Even-marked Buff*.—1.—Barton, York. 2.—Gyston, Northampton. 3.—Champlay, Scarborough.
BELOIAN.—*Clear Yellow or Buff*.—1 and 3.—Forth, Pocklington. 2.—Hawman, Middlesbrough.
YORKSHIRE.—*Clear Yellow*.—1.—Johnson, Carlton. 2, Cowl & Simpson. 3.—Bachelor, Whitby. *Clear Buff*.—1.—Belk, Dewsbury. *Even-marked Yellow or Buff*.—1 and 2.—Belk. 3.—Mackley.
ANY BREED.—*Clear Crested Yellow or Buff*.—1.—Belk. 2, T. Tomes, Northampton. 3.—Mackley.
NORWICH.—*Crested, Yellow or Buff, with Green, Grey or Grizzled Crest*.—1.—Arnold, Winchester. 2.—Garbutt, Great Broughton. 3.—Barwell, Northampton. *Clear Crested, Even-marked Yellow, or Buff Crested*.—1.—Arnold. 2.—Mackley. 3, T. Tomes.
CINNAMON.—*Junco*.—1.—Barwell. 2, G. Stevens, Middlesbrough. 3, G. Brown, Northampton. *Buff*.—1, K. Simpson. 2 and 3, G. Brown.
LIZARD.—*Golden-spangled*.—1, J. Stephens. 2.—Barwell. 3, Rev. T. Ward, Hythe. *Silver-spangled*.—1.—Bell. 2.—Calvert. 3.—Mackley.
GOLDFINCH MULE.—*Even-marked Yellow or Buff*.—1.—Hawman. 2.—Barton. 3.—Tenniswood, North Acliam. *Dark*.—1 and 2, G. Cox, Northampton. 3.—Bell.
ANY VARIETY.—1.—Bell. 2, Cowl & Simpson. 3.—Garbutt.
COLLECTION OF BRITISH OR FOREIGN BIRDS.—1 and 2.—Calvert. 3.—Lister, Malton.
PASQUET.—1.—Wilkinson, York. 2.—Calvert. 3, Barnett. Special 3.—Hotham, York; Miss Inglis, York.
GOLDFINCH.—*Moulted*.—1, Mrs. Jones, York. 2.—Stephens; 3.—Harland.
BULLFINCH.—1.—Harland. 2, T. Tomes. 3.—Arnold.
LINNET.—*Moulted*.—1.—Stephens. 2.—Lister. 3.—Forth.

YOUNG BIRDS.

NORWICH.—Yellow.—1, — Calvert. 2, — Harland. 3, — Hoderine, Leicester.
Buff.—1, — Burton. 2, — Barwell. 3, J. Foster. *Even-marked Yellow*.—1, H. G. Waitwell. York. 2, — Ossett. 3, — Brown. *Even-marked Buff*.—1, Miss Barton. 2, Martin & Griffin. 3, — Calvert.
 NORWICH.—*Dark Crested Yellow or Buff*.—1, — Triffitt, York. 2, Miss Barton. 3, J. Green. *Clear Crested Yellow or Buff*.—3, R. Reed. 1 and 3, not awarded.
 YELLOW.—1, — Hoderine. 2, Cowl & Simpson. 3, — Dickenson, Whitby.
 BUFF.—*Nest*.—1, — Harland. 2, W. Garnett. 3, — Reed.
 CRESTED.—*Nest*.—1, J. J. Thompson. 2, — Triffitt. 3, — Garnett.
 CAGE OF SIX CANARIES, IN VARIETY.—1, — Calvert. 2, — Smith. 3, — Burton.

CONSUMPTION OF EGGS.—We wonder, and reasonably wonder, at the enormous and annually increasing amount of eggs imported into England; but wherever the population goes on increasing far beyond the local power to supply food to that population, thither food of every kind will be attracted. Thus we read in an American paper that a Bowmanville egg-dealer has this season shipped some 50,000 dozen of eggs to New York. But this inevitable result of demand and supply does not excuse our agricultural labouring population for not universally attending to poultry culture. Anyone who traverses the bye-roads and lanes of Sussex, and sees how they are fringed with hen-coops belonging to the cottagers, learns a beneficial lesson, and would impress it as we do upon all our cottage friends.

DOUBLE-CHICKED EGG.—Respecting the occurrence of double-chicked eggs, I may state that a few years ago I had a Turkey's egg, in which two chicks grew and developed up to the point of hatching, but did not hatch. They were quite distinct from one another.—N. B. C., Surgeon.

OUR LETTER BOX.

BOOKS (A. B. C.).—Payne's "Bee-keeping." You can have it free by post from our office for five postage stamps if sent with your address.

DORKING PULLETS DROOPING (E. B.).—Your Dorkings show weakness, and would indicate the want of fresh blood. It may be that your food is too stimulating, but unless meat is very liberally dispensed to your establishment, the scraps should not be so sufficient to disagree with a number of fowls. We have little doubt they are too fat. Feed them with slaked ground oats in the morning, the same in the evening. Give them a spare meal of whole barley at midday. Withhold the scraps for a time, and discontinue Indian-meal. A little fasting will do no harm.

TESTING INCREASING EGGS (M. R. S.).—We have never said that an egg that sank should be destroyed. We have said that an egg that showed no sign of life when it felt the influence of warm water, was always viewed with suspicion by us, and generally condemned. We are seldom wrong in our judgment. The egg that simply floats is generally rotten. Eggs will not display their full vitality in warm water till they are within three days of hatching. When you found that every egg sank and on breaking one found it to contain a live chicken, you should have broken no more, but have replaced them under the hen. To eggs that have never been set upon, the good eggs go to the bottom, and lie there quietly on one side. Those set upon, although they sink to the bottom, stand up on end; those that have been developed and have perished become full of gas and float. We speak from many years' experience. We have followed that which we describe, and do so still with unvarying success.

COMBS CROOKED IN GERMAN BAR HIVE (C. L. W.).—The bees having worked their combs across the frames instead of within each frame, would render the hive useless for the purposes for which moveable frames are intended. Your only plan is to open the sides or ends of the box, and cut out the combs in the best way you can; prune them if too long, straighten them if necessary, and fit them into the frames, securing them temporarily by string, wire, zinc clips, or thin slips of wood tacked to the sides of the frame. Place the frames so filled in position, return the bees, and leave them for one or two days; then take out each frame, remove the temporary supports for the comb, and pare away any projecting portions. In future attach pieces of worker-comb to the upper bars, or run a ridge of melted wax along the centre of their lower sides. The moment you see a comb going wrong remove and rectify it. The German frame-hives are very inferior to the Langstroth, or to the English modification of that principle.

DRONES SLAUGHTERED (B. S. H.).—Your bees seem to be thriving fairly enough, but why the one stock killed its drones we cannot tell without more precise information. Bees will often get rid of the drones after cold or wet weather of some duration, because they are wise enough to foresee the possibility of starvation if they keep on a set of useless and hungry fellows about the hive. You need not be alarmed about that. Perhaps by the time you read this all will be changed, and your bees will be collecting honey fast enough. It is a late year, so that we think it likely honey will be harvested chiefly in July, as the white clover is only beginning to bloom. But all depends upon weather. We should advise you not to allow yourself to be discouraged. If swarms come, place them where the parent hive stood, and so diminish your chances of too many swarms; this will increase your prospect of honey. Give plenty of room in supers. As soon as one begins to fill, slip another between the first super and the parent hive. You must not expect to make your fortune with bees until you have won your experience like everybody else. Write again if you have any further difficulty. We shall be glad to help you to success.

ARTIFICIAL SWARMS (A New Subscriber).—You do not say how you treated your "forced" swarms. Did you put them on separate stands, or in place of the old stocks? Anyhow, we cannot imagine why there was no piping of the young queens. If you put the swarms on new stands they ought to have swarmed again—that is to say, supposing the stocks to have been fairly strong and the weather suitable. We have often forced swarms, and never recollect an absence of piping. You could force a second swarm from each of them if, as you say, they are very strong and working well; but time is short now, and you will probably have to feed them through the autumn and spring. We have no experience of "scraped wax" as a help to bees in comb-making.

PURCHASING BEES (L. M. H.).—Swarms of common bees will cost now

from 10s. to 20s. The most popular bees are the Italians, whether pure or hybrid, which cost more. It is, undoubtedly, a profitable speculation to keep bees if you manage them properly. They will pay more than 100 per cent., taking the average of years. Get from our office "Bee-keeping for the Many," to be had for five stamps. There you will find all particulars about hives. Now is a very good time to establish an apiary. Write to the Rev. P. V. M. Fillett, Biddisham Rectory, Weston-super-Mare.

WOODBURY HIVES (C. M.).—Write to any of the hive-makers who advertise in our columns.

METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Baromet- er at 32° and Sea level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1873.	Inches.	deg.	deg.	N.	deg.	deg.	deg.	deg.	deg.	In.
June.										
We. 18	30.012	56.9	56.2	N.	58.8	74.5	54.1	99.3	50.3	0.070
Th. 19	30.111	64.8	59.0	N.W.	55.4	71.2	51.6	115.8	48.7	0.018
Fri. 20	30.157	69.3	56.3	W.	53.7	72.8	56.9	121.8	56.4	—
Sat. 21	31.241	66.3	62.0	S.W.	59.5	73.2	52.1	131.8	50.7	—
Sun. 22	30.102	69.0	61.8	S.E.	61.6	79.2	61.5	126.0	59.2	0.030
Mo. 23	30.070	61.0	56.4	N.W.	62.5		52.1		51.0	—
Means										

REMARKS.

18th.—Rain in the morning; fine in the middle of the day; rain in the evening, but fine night.

19th.—Fine morning; rain at noon, and a showerly all the after part of the day.

20th.—Dull morning; fine afternoon and evening.

21st.—A most beautiful day throughout, the finest as well as the longest we have had this summer.

22nd.—Fine and warm in morning and till between 7 and 8 P.M., when it clouded over; sharp shower at 8 P.M.; fine afterwards.

Owing to the early period as which it is necessary to send this to press, it has not been possible to insert all the data for June 23rd. The complete data for that day and the subsequent one will be given in our next, as well as the mean values for the week ending June 24th. In the interim it may be well to call attention to the considerable rise of temperature, and especially to the high temperature in the sunshine.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 25.

Business continues steady, and a good supply is maintained, out-door Strawberries becoming plentiful, and a good promise of an abundant season. Hot-house fruit ample to meet all demands at last week's quotations. Pines, however, are lower, in consequence of the West India ones having made their appearance.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	sieve	3	0 to 5	Malberries.....	1	b.	0	0 to 0
Apricots.....	doz.	2	0	3	Nectarines.....	doz.	15	0	31
Currants.....	box	2	6	4	Oranges.....	100	4	0	10
Chestnuts.....	bushel	0	0	0	Peaches.....	doz.	15	0	30
Currants.....	1	sieve	0	0	Pears, kitchen.....	doz.	1	0	3
Black.....	do.	0	0	0	dessert.....	doz.	6	0	18
Figs.....	doz.	6	0	10	Pine Apples.....	lb.	6	0	10
Filberts.....	lb.	0	0	0	Plums.....	1	sieve	0	0
Cobs.....	lb.	2	0	2	Quinces.....	doz.	0	0	0
Gooseberries.....	quart	0	0	6	Raspberries.....	lb.	0	0	0
Grapes, hot-house.....	lb.	4	0	10	Strawberries.....	1	b.	0	6
Lemons.....	100	6	0	19	Walnuts.....	bu-hel	15	0	30
Melons.....	each	5	0	8	ditto.....	100	2	0	2

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0 to 6	0	Mushrooms.....	pottle	0	0 to 2	0
Asparagus.....	100	3	0	6	Mustard & Cress.....	punnet	2	0	0
French.....	6	0	12	0	Onions.....	bushel	4	0	10
Beans, Kidney.....	100	1	6	2	Pickling.....	quart	0	6	0
Beet, Red.....	doz.	1	0	3	Parsley per doz. bunches	0	6	0	4
Broccoli.....	bundle	0	9	1	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	1	Peas.....	quart	2	0	5
Capicums.....	100	0	0	0	Potatoes.....	bushel	6	0	9
Carrots.....	bunch	0	6	0	Kidney.....	do.	0	0	0
Cauliflower.....	doz.	3	0	6	Round.....	do.	0	0	0
Celery.....	bundle	1	6	2	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	6	4	Rhubarb.....	bundle	0	6	1
Cucumbers.....	each	0	6	1	Salsify.....	bundle	1	0	1
Pickling.....	doz.	0	0	0	Savoy.....	doz.	2	0	3
Endive.....	doz.	2	0	0	Scorzoneria.....	bundle	1	0	0
Fennel.....	bunch	0	3	0	Sea-kale.....	basket	0	0	0
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	3	0
Herbs.....	bunch	0	3	0	Spinach.....	bushel	2	0	3
Horseradish.....	bundle	3	0	4	Tomatoes.....	doz.	2	0	3
Leeks.....	bunch	0	2	0	Turnips.....	bunch	0	3	0
Lettuce.....	doz.	1	0	2	Vegetable Marrows.....	0	0	0	0

POULTRY MARKET.—JUNE 25.

Ours becomes a Cackoo note, we are looking for a better supply. To this true it is a sort of poultry, "Anne, sister Anne, do you see anything coming?" But as all things happen to him who can wait for them, we shall be right at last, but not now.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowl.....	6	0	6	6	Pheasants.....	0	0	0	0
Smaller ditto.....	5	0	5	6	Partridges.....	0	0	0	0
Chickens.....	8	6	4	0	Hares.....	0	0	0	0
Goosings.....	7	0	7	6	Rabbits.....	1	5	1	6
Green Geese.....	0	0	0	0	Wild ditto.....	0	9	0	10
Ducklings.....	3	6	4	0	Pigeons.....	0	9	0	10



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